A SOCIOLOGICAL STUDY OF SCHOOL TRANSFER AND THE LEARNING OF MATHEMATICS

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We do what we choose to do, and what we choose to do must be what we have learned to do and want. What we can do depends on what there is to do, what we have to do with it, on what we think we are likely to get and lose as a result, and on what others will let us do. What we have learned to do, and want has been learned from our culture, and what a viable culture teaches us, must be routines which will effect its reproduction.

(Nash, 1990, p. 445)

We can always say that the individual makes choices, as long as we do not forget that they do not chose the principle of their choices.

(Bourdieu and Wacquant, 1989, p. 45)

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ABSTRACT

This research explores the complexities of children's everyday experience, examining the common threads and distinctive textures of the lives of four children on their educational journeys from primary to secondary school. Whilst the classroom focus of the empirical work has remained with the teaching and learning of mathematics, I have retained a wider view on the overlapping social spaces in which these children are located. Hence this thesis is less to do with mathematics per se than it is concerned with the lives of children and their families, friends and teachers. This research was conducted, and this thesis constructed, in parallel to my transition into academia and so what follows narrates part of my own story of transfer and socialisation. The notion of reflexivity, of understanding my position within the research, is central to the methodological and theoretical work of the thesis and so I will begin with an account of how I have come to be doing this research, at this time, in this place.

Following that personal preface I proceed to review the literature concerning the transfer from primary to secondary school. This is organised chronologically with the aim of tracing the development of the main themes during the last forty years, as well as identifying what is missing in the literature. This lays the foundations for an exploration of the stubbornly resistant, reproductive mechanisms that work to structure the social and educational experiences of children at transfer. This social structuring is part of what I have termed the learning landscape.

Metaphor is a conceptual tool by which we come to understand our world and through the development of a learning landscape metaphor I will theorise the various influences upon the learner of mathematics. This will include a consideration of how government policy, school cultures, family attitudes and so on, affect the learning of mathematics in the classroom. The motivation for such theorisation arises firstly from the supposed failure of educators to ameliorate the problematic aspects of school transfer. Such accusations of teacher failure are made possible by oversimplified, decontextualised theories of the highly complex influences at this educational branching point. The literature reveals that despite decades of research there is still a relative disadvantaging at transfer of those children who come from families with lower capital

resources. The second motivation for this research is my deeply held personal concern about poor attitudes to the study and use of mathematics in the UK. The learning landscape metaphor provides some insights into the culturally embedded nature of this problem.

I have adopted a collective case study approach and made considerable use of the theory of practice developed by the French sociologist, Pierre Bourdieu. Using Bourdieu's tools of habitus, field and capital, I have moved to and from the macro-sociological 'landscape' to a study of individual and interrelated lives. At the heart of the thesis the theoretical framework sits together with the empirical case studies and although they will be read sequentially they can only be understood together. Following Bourdieu, the theoretical and empirical cannot be separated without the risk of the practice of theorising becoming more central than the theorising of practice.

Following the analytic case reports, I develop a model that describes four 'aspects' that describe the critical role played by teachers in children's experience of moving between the two schools. These aspects are teachers' subjective views of children's based upon historical, mathematical, attitudinal and capital data. These aspects are used, together with the case reports, to explain the mechanisms whereby social inequality is reinforced and how those children endowed with greater capital are relatively advantaged in the transfer.

Finally, I conclude with a discussion of the current state of the mathematics learning landscape and a reconsideration of whether or not school transfer could ever be described as a "fresh start". In addition, I will discuss how my theoretical perspective explains systemic and individual contributions to processes of resistance and reproduction.

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1. INTRODUCTION

By way of an introduction I want to reflect on my own development as a teacher and researcher and, consequently, my relationship to this research. Why have I arrived at this point, doing this piece of research, at this time, in this way? Bourdieu, whose work I make extensive use of, would contend that my professional, career and research trajectories have not been accidental but are a function of my social position, itself defined by 'volumes' of cultural, economic and social capital (see Section 4.3.4). The course of my academic development is not merely a function of my own choosing but is rather dependant on the 'regulated improvisations' of my habitus (Bourdieu, 1977, p. 78). That habitus is comprised of a matrix of dispositions that have been acquired from, and modified in response to, my particular life experiences. I will return to Bourdieu's theory of practice in more depth in Chapter 4 but firstly I will present a historical rationale for this thesis.

1.1 INFLUENCES AND CHOICES

I was a 'last-minute' entrant to the teaching profession in the early 1990s. I applied late for a Postgraduate Certificate of Education in secondary school mathematics teaching and filled the last place on the course. My parents had both been secondary school Geography teachers and despite their and others' assertions that I would make a good teacher - whatever a 'good' teacher might be - it remained the one thing that I was determined not to do. Yet despite this attitude it was, as I quickly realised, the most

'natural' course of action for me to take, what Bourdieu would describe as "co-option based on the immediate harmony of dispositions" (1984, p. 110).

From my early days within the teaching profession I had two simple aims or concerns:

1. Firstly, not to be drawn into teaching to tests and exams. 'My' holistic philosophy of schooling/teaching meant that children's wider personal development took priority over the attaining of good exam grades. This had a very definite effect upon my developing classroom practice, particularly with regards to the epistemological and pedagogical principles underpinning my teaching. During my years of teaching mathematics, the increasingly dominant assessment and accountability discourses became professionally debilitating for me.

2. Secondly, I hoped that one day I would meet parents that I had once taught, now at their children's parents' evenings, and they would be positive about their experiences of school mathematics. So, rather than hearing many mothers saying to me, often in front of their daughters, "Oh, it's OK, I could never do maths at school", the vicious circle would be broken and narratives of school mathematics would become positive and encouraging.

When I look back to those early days in teaching, these two concerns protrude as iceberg peaks, hinting at a (largely inherited) teaching philosophy and ideology. Over the ensuing decade my thinking has expanded considerably but those two features are still present. The second in particular is evident in this thesis: how are the negatively held perceptions of mathematics, which seem so culturally entrenched, generated and

regenerated? However, these concerns were by no means my own invention. Nor was the larger, hidden, and then unexplored part of my teacher habitus that still sat submerged under the surface, unexposed by self-reflection. As Bourdieu explained, I am free to decide my actions or educational priorities but I am not free to choose the principle by which I make these choices (Bourdieu and Wacquant, 1989, p. 45). So, those two aims that have shaped my thinking about teaching are deeply ingrained but I cannot fully understand their origin. They are dispositions of a habitus that has been shaped in a large way by my parents and reinforced or modified by colleagues in the teaching profession.

I was unaware until I took up my education lecturing post that my father had moved from the classroom to teacher-education at exactly the same point in his career. It was in those early years in this new role that he himself undertook his own doctoral research and now I find myself repeating the same pattern, not deliberately, but the coincidence betrays an underlying sociological principle. This route had never been part of any career-plan or life-plan but uncovers a current of social reproduction, the mechanisms of which are tied up in those 'regulated improvisations' of my habitus. This theme is central to my own research into children's perspectives of schooling and mathematics.

My first head of department, who has for many years been an active member of one of the mathematics teacher associations and is now also working within initial teacher education, further developed my ability to think critically about the education system of which I had become a part. Even in that appointment a harmonising of dispositions was occurring. She encouraged me to develop my concept of a Mathematics Roadshow that

would visit our linked primary schools and work with the year six children prior to their move to the secondary school. She also encouraged me to take a leading role amongst the group of mathematics co-ordinators from the family of schools: developing shared understandings of the nature of teaching and learning mathematics. My first publication (Noyes, 1994), an account of the mathematical success of a year seven boy with dyslexia, was undertaken with her encouragement.

Whilst at that school I also got to know the teacher-educator who would later become my research supervisor, academic colleague, mentor and friend. I have worked with him for a number of years, mainly through the mentoring of PGCE students that were placed in our school. Through these meetings I discovered another person with whom I enjoyed much *dispositional harmony* regarding what we would describe as good teaching and learning of mathematics. Through these meetings I focused my thinking about my future in education. He was very supportive when I wanted to apply for a Best Practice Research Scholarship in 2000 and later in the development of this research interest into a PhD proposal. Although I had some interest in school transfer it is not mere coincidence that he also shared this interest and so was very encouraging in the early development of my proposal. It is also not to be overlooked that his positioning as a sociologist of education, with an interest in issues of social justice, has in some way steered, or at least reinforced my own research intentions.

When conducting my early reading I was exploring, simultaneously, Blumer's "Symbolic Interactionism" and Bourdieu's "Outline of a Theory of Practice". Unbeknownst to me my supervisor was familiar with Bourdieuan sociology, and that

has probably been a factor in my adopting a Bourdieuan framework to my thesis. That is not to say that we discussed Bourdieu's work at that time or that he recommended his theoretical framework, as in fact he tried to deter me from reading Bourdieu's obfuscated writing at that early stage in my work. However, if research students are known to be motivated to impress their supervisors and if those supervisors give clues, even subconsciously, through the manner of their responses to situations like the one above, then the student's research trajectory is altered. There is nothing sinister in this but such decisions need to be subjected to sociological reflexivity. I have worked hard to ensure that even though my course of action could not be sociologically theorised as entirely of my own choosing, that is it might have chosen me as much as I have chosen it, I can convincingly justify the research decisions that I have made.

It is important for me to reflect upon these influences at the outset of this thesis in order to position myself, and therefore this work, within my own social history and trajectory. I need to recognise the strong current of social reproduction, of dispositional harmonising that I see in my own intellectual and career development, as well as to acknowledge that later influences have also confirmed and steered my intellectual trajectory. However, this is not simply at the level of the whole thesis, and of recognising my social position/ing as an academic, but of critiqueing the influence that I increasingly recognize in my own research and teaching practices.

This kind of reflexivity surfaces through the reporting of the empirical work as I struggle to counter my impact, as a white, 'middle-class' male, upon the research process. The notion of struggle when critically examining issues of class, gender, race,

etc., is usually reserved for those who are, or have been, marginalised by the powerful social forces that stratify society. Anecdotal evidence suggests that a disproportionate number of researchers from working class backgrounds have devoted their academic work to examining issues of social justice, or of educational resistance. For me the struggle is a different one, as I recognise the power that I have to interpret the actions of children and parents from the working classes as *inappropriate*, *bad mannered*, *rebellious*, and to report such bias. In the case reports that come towards the end of the thesis I report several occassions on which I had to challenge my own deeply embedded prejudices. So the struggle for me is an unending one, through which I critique my 'natural' tendency to misrecognise for example, resistance to an unjust system as *rebellion*; a child using their mobile phone in school on their mother's instruction, or a parent describing their daughter as a 'little shit', as *inappropriate*; a 'working class' mum continuing ironing through my interview as *bad mannered.* In these and many other instances I have had to recognise, and critique, my membership of the dominant group of a system, which in a myriad of ways is structuring society along lines of class, gender and race, and so on.

Throughout this thesis, social class is taken to be the primary axis of analysis, with issues of gender and race being subsumed into that analysis. Bourdieu's critics have highlighted his lack of attention to issues of gender and race (see Reay, 2004), and his prioritisation of class over other avenues of critical analysis. Notwithstanding the criticisms, I follow Bourdieu in this regard. Although the reader will note later on that the two boys happen to be from families endowed with greater stocks of cultural, social and economic capital, whereas the girls are from single-parent, working class families,

such a division is probable with this small number of case studies. So whilst notions of masculinity and feminity are, no doubt, important to the development of children's mathematics learning trajectories, class is more important. By this I mean that if there a working class girl and middle class girl (if I can use such crude categories), then the differences between their learning trajectories is typically greater than, say, the working class girl and boy. There are no doubt gender differences, even some that are peculiar to mathematics, and although I will examine these, the main axis of analysis remains social class, as the primary shaper of life possibilities and mathematics learning trajectories.

I am concerned to show within this thesis that there is a lot more social interconnectivity and reproduction taking place, within and without our education system, than we often acknowledge. Moreover, my adopted sociological ontology militates against an individualistic conceptualisation of children learning in schools. So, whilst this thesis depends largely upon four case studies, both the theoretical and methodological frames lead me to use these as cases of larger groups, as fluctuations from larger classed categories. That is not to deny the place of agency in the evolution of social and education trajectories but just to recognise the powerful coupling of agency and structure in Bourdieu's notions of habitus and field.

The research was originally planned to last throughout year six and seven but the data collection was curtailed in the early part of the second term in the secondary school. This was due in part to the changes that occurred in the research context that allowed much better tracking of the early process of socialisation into the secondary school and mathematics classroom. I explain later in the thesis how the teachers in the secondary

mathematics department changed their induction and setting process part way through the field work. In addition they did not receive data regarding children's prior attainment until the third week of term. All of this meant that I was able to see more clearly aspects of the early positioning of children, by each other and by the teachers. These positioning strategies were partly in relation to teacher interpretations of mathematical competence but were also heavily influenced by aspects of the children's broader identities, by the dispositions and strategic actions of the habitus that betrayed their class affiliations. In fact the case reports are more focused on discussing wider aspects of these children's school and life experience, than they are a narrow analysis of mathematics classrooms. The mapping of the dispositions of their habitus, and the positioning role of the fields in which they are located, have a more significant and generic effect upon their mathematics learning trajectories than do the mathematics lessons *per se*. This is similar to the point made about the primacy of class over gender and race. Here I suggest, and this is theorised in the learning landscape metaphor and through Bourdieu's sociology, that class (i.e. family habitus, capital, etc.) has more of an effect upon children's mathematics learning trajectories than their classroom experiences of mathematics. Or that mathematics learning experiences are framed within the powerfully structuring currents of social life. This is precisely what the *climate* aspect of the landscape metaphor explores (Section 4.2.3), which is then examined in finer detail using the field analysis. The way in which learners and teachers dispositions are 'transposed' (Bourdieu, 1984) into the mathematics context from other areas of actor's social experience is centrally important to the thesis. Hence, many methodological choices and the thesis itself reflect this interest in the wider fabric of children's social experience, of which mathematics learning is merely a strand.

1.2 RESEARCH RATIONALE

During the early stages of this research I moved from the classroom to take up a university lecturer post, focused mainly on initial teacher education. I was moving from a place where I had taught for nine years and where I was very much part of the established core of staff. I had management responsibility within the mathematics department and the school sixth form. My teaching was well developed and respected and I knew most of the staff, many of the children and enjoyed a good rapport with my classes. I thought I had some idea of what I was moving to (which as it turns out was a rather poor reflection of the actual role) and my initial excitement focused on the material benefit. I would have my own office, computer and phone, and my timetable, or rather diary, was flexible enough to allow opportunity to pursue wider interests within education. However, as my research diary records, one of the most vexatious questions I had concerning this transition was what I should call myself: Andrew or Andy? One might consider this a mere trifle compared with research project bids, higher degree course teaching or presenting at international conferences, but since my move to Sixth Form at the age of sixteen when I renamed myself I had been known to everyone as Andy. These two names conjure up two images. Names reflect personal taste, cultural capital and thereby social position (Hey, 1997, p. 141), and so this move presented me with a intellectual quandary approaching my new role and identity at the university. Did I want to present myself more formally or informally? This is not something that I have fully resolved but have retained Andy amongst colleagues whilst writing and communicating as Andrew. It seems that I was approaching my impending transfer in a not dissimilar way from many children: I was very concerned about aspects of my personal status. I was about to move into a new social situation with all of its attendant

stresses and opportunities but I wanted to strike the right note: how should I present myself, what image do I want other people to have of me and so on.

Those concerns were very similar to the ones I recall from my own school move, leaving home to attend university and even taking up my first teaching post. Many issues concerned me then, and some of them still concern me now. For example:

- Does my bag have the right brand name on it?
- Will I cope with the different systems and the new subjects?
- Am I dressed acceptably?
- How will I make new friends?

My anxieties were largely concerned with whether I would accept, and be accepted by, my new peer-group. This again forms another significant strand of my research, namely that transitions in education are complex social events involving a range of people both 'on stage' and 'behind the scenes', both current and historical. My thesis examines the social system in which the child is placed and explores how the social structures of, and structuring by, that system diachronically influences the children within it. Such a system contains the friends and families of children but also teachers, the wider peer-group and society as a whole. As I am considering this system but looking at classroom teaching and learning I will be examining in some detail the relationship between mathematics teacher and learner and how this shapes the transfer process.

1.3 DEFINITIONS AND ABBREVIATIONS

Galton, Gray and Rudduck (1999) use transfer to refer to movement between schools, as opposed to transition between other years of schooling and I adopt the same terms. I

maintain a distinction between learning, education and schooling. Learning is the sum of all of the learning experience that the child has, or constructs knowledge and expertise from, and might be at home, at school or elsewhere. If this learning arises as a result of the intentioned actions of another person I shall refer to this as education. Parents, friends or teachers might carry this out. One subsection of the educative endeavour occurs in school. Not all that is schooling is education, in the sense of academic or personal development, but all schooling functions, as I shall explain, as part of our culture to maintain our culture.

BERA	The British Educational Research Association.
BPRS	Best Practice Research Scholarships were research bursaries that teachers could apply for each year in order to conduct small classroom research projects. They ceased to be awarded in 2004.
CATs	Cognitive Ability Tests; designed and administered by the National Foundation for Educational Research (NFER). In this study children complete a range of multiple choice tests early in year seven, following their transfer to the secondary school. The results from these tests are norm referenced and reported to teachers. They are also used in school to predict expected outcomes at KS3 and GCSE level.
FTM	The Framework for Teaching Mathematics, follows on from the NNS at primary school level. It is classed as government guidance but there is strong expectation that it will be implemented in all secondary schools. This process is now in its third year (DfEE, 2001b).
KS2	The second Key Stage of compulsory schooling in the UK is the upper primary level for children in school years three to six, aged seven to eleven. All children sit SAT tests at the end of the four years. The results of these

tests in mathematics, English and science are used to track the progress of children, assess schools' performance against national targets, and are forwarded to the secondary school for use by teachers.

KS3 The third Key Stage of compulsory schooling in the UK is for children in the first three years of the secondary school, years seven to nine, aged 11 – 14. As at Key Stage 2 all children sit the culminating SAT tests.

NNS The National Numeracy Strategy is now well established on the primary school education landscape. The Numeracy Hour has become an established part of the curriculum and the Strategy details learning objectives and programmes of study for mathematics teaching and learning.

NQT Newly qualified teacher status is conferred on those trainees who have met the standards for Qualified Teacher Status and are in their first year of teaching.

PGCE The Postgraduate Certificate of Education is normally undertaken by graduates over a period of one year culminating in them achieving Qualified Teacher Status.

QCA Qualifications and Curriculum Authority

QTS Qualified Teacher Status

SAT Standard Assessment Tests; taken at the end of KS1 (aged 7), KS2 (aged 11) and KS3 (aged 14). Still commonly known as SATs, these have now been renamed as National Curriculum Tests or simply national tests.

2. SCHOOL TRANSFER: A REVIEW OF RESEARCH

This chapter considers the history of research into the transfer between schools, particularly primary to secondary school at age eleven, over the last forty years. This account is subdivided into sections covering early research, the Eighties, the Nineties and finally into the 21st Century (current research). These four sections could be divided into two halves that broadly relate to periods before and after the Education Reform Act (1988) and the introduction of the National Curriculum.

Throughout this history several strands of interest appear. There are studies informed by quantitative and qualitative methodologies and an emerging interest in the children's perspectives on their transfer experiences. However, despite all of the attention given to this critical transition, both by the education research community and by politicians, I report that little has changed. The peculiar domains of primary and secondary schooling remain largely the same and children's experiences of the transfer retain many of the difficulties that they had a generation or more ago.

In the face of this I will conclude by making a case for examining why this transition has been so resilient to change. In order to do this an analysis of the 'bigger picture' is needed, which necessitates a far more extensive consideration of the social context of schooling than has often been incorporated into school transfer research. This in turns sets the scene for the development of the theoretical framework in Chapter 4 and methodology of Chapter 5.

2.1 INTRODUCTION

In recent years school transfer research has become higher profile and diversified, particularly with the Government's standards agenda targeting well known and longstanding 'weaknesses' in the schooling process. The process of school transfer presents a significant obstacle to the government's desire to raise achievement in standardised Key Stage 3 tests (Noyes, 2004a). Consequently official rhetoric has promised solutions to the problems of school transfer.

> For many years transition from primary to secondary school has been inadequate. Far too many 11 year olds have lost momentum in the last few weeks of primary school and over the summer holiday before they start secondary school. All too often when they do start secondary, teachers start with 'a clean slate' and set expectations lower than they should be. The result has been that by the end of the first year in secondary school many pupils have made little progress and lost motivation and as many as 30 per cent actually achieve lower standards than in the last year of primary school...We have therefore begun to address what, for the last generation or more, has been neglected or swept aside as an intractable problem. (DfEE, 2001, p. 40)

I am going to present here a broadly chronological overview of school transfer research, which will chart the development of the varied research strands. I have not made reference to every writer but have included what I consider to be the key research reports and articles, particularly in relation to my intention to explore the broader social-cultural context of school-transfer and the learning of mathematics. I have also tried to select elements of this body of research that are pertinent to my study (for another history of transfer research see Hargreaves and Galton, 2002a).

Most of the sources referred to below have originated in the UK. There is some research from the U.S. (for example, Anderson, Jacobs, Schramm, and Splittburger, 2000; Rice, 1997) but there has been little cross-referencing amongst the two groups of researchers. Therefore I will not explore this work in any depth, as it does not enhance my argument and the socio-cultural US concerns are not entirely the same as those in the UK.

This chronological survey will serve to highlight the fact that many of the major hurdles involved in moving schools have not changed since the early work of Nisbet and Entwistle (1969). The problems are far from being solved and are arguably only partially soluble at best. In fact, describing issues of school transfer as *problems* to be *solved* is unhelpful: any transfer situation is steeped in challenging changes in the physical, intellectual and social structures. The transfer then raises interesting research problems to be explored. What is of central importance is increased understanding of these problems; only then can the negative impact of school transfer be minimised. I would argue that this transfer process needs to be understood more completely and holistically if any long-lasting and meaningful systemic changes are to be made. Whitty (2001, p. 209) asserts that "far too much research, as well as education policy, remains stubbornly decontextualised" and so this literature overview will be looking in particular for examples of school-transfer scholarship that is contextualised in the socio-cultural experience of children and teachers.

The review of research considers early studies before looking separately at the research from the 1980s and 1990s. These two decades correspond to the periods either side of

the implementation of the National Curriculum. Following those considerations I will see where the school transfer research agenda has moved to in the early years of the new millennium and introduce my aim of taking a 'big picture' perspective as part of the thesis. 'Big' in this case is not about size but rather scope, i.e. the consideration of how a wider range of socio-cultural factors impact children at transfer.

2.2 EARLY SCHOOL TRANSFER RESEARCH

Historically, children have moved between schools at various points in their educational careers. One of the earliest studies, conducted by Nisbet and Entwistle (1969) sought to discover the most appropriate, i.e. least disruptive, time to move to secondary school. Their longitudinal study of several thousand Scottish school children highlighted a number of social factors affecting children's chances of moving schools well. These included "socio-economic status, parental involvement, pupil's ambition and their social maturity" (Hargreaves and Galton, 2002a, p. 4).

Youngman (1978) recognised that even in those early days of school transfer research there was a preoccupation with practical arrangements and systems, an imbalance that has also shaped much of the subsequent research in this area. At that time ability was considered to be "the major determinant of achievement in the secondary school" (p. 280). Youngman identified six categories of children's reactions to school transfer: three high ability: academic, disenchanted, capable and three low ability: contented, disinterested, worried. What he did not do was make any attempt to explain the reasons behind those responses. What were the factors that caused the children to respond in different ways? Did they arise from the transfer arrangements, the culture of the school,

or were they socially determined through, for example, parental attitudes to school. In addition, although he arrived at these six groups from quantitative analysis of large data sets one is left wondering whether any child can be described so easily. Each child has a complex life history that has prepared him or her to react to moving schools within certain parameters. In fact, Youngman's categories don't really help the teachers of children arriving into the new school: there is no suggestion of how teachers might respond to those six types.

2.3 SCHOOL TRANSFER RESEARCH IN THE EIGHTIES

During the eighties a number of ethnographic studies were undertaken such as Measor and Woods (1984) study and the ORACLE study (Delamont and Galton, 1986; Galton and Willcocks, 1983). This large scale, ethnographic, ORACLE study, conducted through the second half of the 1970s, was focused on teaching and learning in primary classrooms but also enabled the researchers to examine the transfer process. This project presented extensive empirical findings which have provided a marker for comparison twenty years on (Hargreaves and Galton, 2002b). So this work in particular has maintained its central importance in the literature.

At around the same time Power and Cotterell's Australian study highlighted, concurring with Nisbet and Entwistle, the significance of socio-cultural factors concluding that:

> ...the nature and intensity of the transfer problems experienced by students appear to be a function of student social backgrounds, sex, age, ability, and personality characteristics. Under the conditions operating in most schools transfer is likely to create more intense problems for less able, socially immature children who were low achievers in primary

school, who came from working class families, and who had negative attitudes towards primary school. (Power and Cotterell, 1981, p. 1)

They describe the "nested structure" of the various relationships and socio-cultural factors that impinge upon what happens in schools. They acknowledge the early stresses that result from moving school but that in the long run the process results in generally higher levels of self-confidence. They also draw attention to some of the challenges faced by teachers and learners of mathematics. However, those particular findings are not necessarily relevant to a UK situation nearly a quarter of a century later. Despite providing some promising findings on the social nature of the transfer process there is little attempt to explore the mechanisms by which certain groups appear to be disadvantaged. This is something that I want to address in this thesis. Furthermore, a deficit model is used to explain the disadvantaging process of school transfer and I will show later that this model is unsatisfactory.

Measor and Woods (1984) recognised the inadequacies of much of the other transfer research in that it only focused on one aspect of the total situation. They claimed that the success of their approach is due in part to the "wide ranging perspective on the total pupil experience" (p. 158). Their case study has some similarities with my own research, especially in this respect of considering the whole system in which children are immersed, but it was still very much located within the education system. Their study focused on the perspectives of children, their experiences of, and anxieties concerning, changing schools. They identified that there were three different status passages: the formal and informal culture changes and puberty. They noted that it was the children's informal passage between schools that was the most problematic and yet the least

understood and researched. This has been redressed somewhat in recent years but it is still the case that those who want to change the transfer process quickly have failed to take adequate account of the complexities of this informal passage.

During the eighties the issue of curriculum continuity was becoming a high priority and indeed became one of the express aims of the new National Curriculum, introduced in 1988 under the then Conservative Government. Ginnever boldly asserted that "with goodwill and sustained commitment by all concerned curriculum continuity could become a reality and be of the utmost reality to the children in our care" (1986, p. 194). Curriculum continuity remains the *Holy Grail* of school transfer. There seemed to be an opinion that if we could only attain curriculum continuity then all school transfer problems would have been solved. However, this is an impossible aim since curriculum content, school culture, education philosophy and pedagogy are all inextricably entwined. It might be more appropriate to talk of a process of curriculum convergence that has some sort of asymptotic limit. However, the goal of curriculum continuity has not been abandoned but is now pursued within school mathematics teaching under the banner of the National Numeracy Strategy and the Framework for Teaching Mathematics in Key Stage 3 (Ofsted, 2004).

Gorwood (1991) highlighted curriculum discontinuities within two established mathematics schemes and described mathematics as "demanding a sequential approach" (p. 68). This betrays a particular epistemological perspective but mathematical knowledge could be described as a network or web of concepts. Indeed effective teachers of numeracy have been described as those who can help children to develop

such inter-linked conceptual frameworks (Askew, Brown, Rhodes, Wiliam, and Johnson, 1997). Gorwood's perspective suggests that if one understands mathematics to be learnt (and therefore taught) sequentially, then all the primary teacher need do is inform the secondary school of which rung of the learning ladder the child is on. Then he or she can naturally progress up that ladder following transfer. If, on the other hand, a child's mathematical knowledge is constructed as a network or web of concepts then each child has an almost unique section of that network constructed, a range of links of varying strengths between concepts at any one time. How the teacher records that, if indeed it can be done at all, then becomes a great challenge for the year six teacher. It also means that although the year seven teacher might know a broad level of overall ability from the National Test scores it is very difficult to ascertain the extent of each child's mathematical skills and experience.

Gorwood agrees with Power and Cotterell, Measor and Woods and others by acknowledging that:

> ...differences in pupils' background characteristics influence their experience of transfer...levels of parental education, type of accommodation, attitudes towards literacy and to some extent parental occupation - all distinguished significantly between pupils who improved after transfer and those who did not. (Gorwood, 1991, p. 53)

Gorwood described how transfer "adversely affected the attainment of the working-class child whose poorly educated parents failed to give him the right sort of encouragement and could not appreciate the need for a quiet place to study" (p. 53). This, another deficit model, using words such as "failed" and "could not" is interesting, as it seems to indicate a class judgement on behalf of the author. The implication is that somehow the parents were at fault, they did something wrong to hinder the progress of their child.

Perhaps the author could have said, *'at transfer, the education system failed the working-class child because it (the system) didn't appreciate the inherent class bias in its particular ways of working'*. What we can say with confidence is that there exist class-dependent dispositions to schooling that do have an effect on the child throughout their school career and perhaps particularly at critical points in the process, for example, school transfer. The question as to whether these arise as a result of conscious decisions on the part of the parent, or occur as the result of a more insidious and inherently prejudiced class reproduction function perpetuated by our educational system, is the focus of this research.

As well as the curriculum discontinuity that existed at that time, educational researchers were also highlighting other discontinuities. Derricott (1985) alerted the education research community to the fact that "techniques of assessment experienced by pupils as they cross the primary-secondary transition probably represent one of the most obvious but taken for granted discontinuities" (p. 122). Derricott's work utilised the opinions of the children by interviewing them post-transfer. He noticed that the children chose not to talk about their experiences of the curriculum and the classroom but would rather speak of their friendships, and other aspects of their changing social climate. Many other researchers have also found the same propensities amongst children (see, for example, Brown and Armstrong (1986), who used children's essays, and the later work of Rudduck (1996)). This work on assessment by Derricott and others (e.g. Stillman, 1986) has reduced relevance in some senses, due to the significant changes that have taken place in education during the last two decades. However, serious questions still remain concerning the changing nature and purpose of assessments on either side of the

transfer. Even though there is much more prescription and uniformity about the major assessment points in KS2 and 3 there are still, no doubt, critical differences in the assessment processes. Moreover, as Cooper and Dunne (1998; 2000) have reported, the KS2 Mathematics national tests are themselves a vehicle for social injustice. I will return to this in Chapter 9.

During the 1980s the focus was still very much on the children and teachers who were directly involved in the schooling process, but a couple of researchers were incorporating a parental perspective to this body of research knowledge: Bastiani (1986) and Worsley (1986). To date, this dimension of the child's passage from the primary to secondary school remains under-researched.

Summerfield (1986) highlighted the need for the individual child to be considered and also recognised the importance of quality relationships with teachers. This could be achieved partly through a good pastoral team within the secondary school but needed to extend to every member of staff.

Youngman (1986) brought together a number of the articles referred to above and concurred with Nisbet and Entwistle who "identified ability as the chief predictor of adjustment" adding that "social class had no effect if ability were taken into account" (p. 3). That assertion presumes that ability and social class are independent variables, which is arguably not the case (Gillborn and Youdell, 2001; Nash, 2001). Conversely, if they are dependent variables then Youngman could be interpreted as saying that the class stratification of ability that started in the pre-school years, is perpetuated in the primary years and now continues into the secondary years.

One of the contributors to Youngman's book that I have not yet mentioned is Murdoch (1986). She explains that:

> When children transfer to their next stage of schooling they face not only different teachers and surroundings but also changes in the nature of schooling itself, such as differences in the length of the school day, timetabling, teaching styles and curriculum. (1986, p. 47)

This concern about the systemic differences between two schools is important. Murdoch's work was concerned with the transfer from middle schools (aged 13/14) and although addressing subtly different issues, due in part to the historical rationale for the development of this alternative schooling structure, she highlights the general paradoxical nature of school transfer:

> On the one hand transfer is traditionally accompanied by formal and informal ceremonies which serve to remind the child of his change in status; and, on the other, many teachers feel compelled to ease the transfer for the pupils by 'bridging the gap' between primary and secondary schooling. (Murdoch, 1986, p. 52)

Whether or not this process can be smoothed or must by its very nature remain discontinuous will be considered later in the concluding chapter. Whatever happens, transfer remains "one of the social and cultural requirements of society" and Murdoch rightly questions the assumption that the process can be improved through better organisation. Considering that this doubt was expressed nearly twenty years ago and that still the UK government is targeting organisational initiatives at the transfer point, it would appear to have been a good criticism of much of the research into transfer. The policy focus on improving systems has not yet had the desired effect and we are advised by Murdoch to fully understand the two different learning environments, so that effective support can be given to those in need, rather than trying to fudge the boundary. I am going to explore these *learning landscapes* in more detail in Chapter 4.

2.4 SCHOOL TRANSFER RESEARCH IN THE NINETIES

Gorwood (1991) was one of the first to write about school transfer after the introduction of the National Curriculum and was unconvinced of its power to affect change. He believed that problems at transfer exist principally "because of extreme differences in curriculum between the two sectors" (p. 283). The National Curriculum would not be able to change the major factors causing discontinuity and indeed there is still no evidence to suggest that it has made this intended impact on curriculum continuity (Hargreaves and Galton, 2002a, p. 24). For Gorwood, the major factor was those secondary teachers who had failed to "take cognisance of what and how their pupils learned before coming to them" (p. 284). What he did not do was problematise the transfer of knowledge about children's past learning. If a child arrived in year seven with a National Curriculum level five what can the new teacher infer from this? It does not imply that all aspects of his/her mathematics are at this abstract level five, or even that for any individual mathematical idea his/her understanding is any further on than a child attaining level four, for that particular idea. This criticism also exposes the differing nature of the primary and secondary teacher roles. The latter would see their Year 7 class for a few hours per week and would spend the rest of their time with up to several hundred other children up to the age of 18 during that week.

Was Gorwood suggesting that secondary teachers should adopt similar pedagogies to their primary colleagues? What has in fact happened is that increasingly the upper years of the primary school are a pedagogical foreshadowing the secondary school (Galton, Comber, and Pell, 2002, p. 131). Where Gorwood was right, was to highlight some of the inadequacies of the National Curriculum, but placing the responsibility for

curriculum continuity at the feet of the secondary teachers is unrealistic and the goal of pedagogic continuity is probably unattainable. The most recent curriculum policy initiatives in mathematics are seeking a convergence of pedagogy but this is by prescription rather than persuasion and still fails to take full account of the underlying differences in school culture. Gorwood explained that "by their very training, teachers in our schools have been encouraged to maintain fundamentally different philosophies of primary and secondary schooling" (Gorwood, 1991, p. 289). However, it is not the responsibility of the teacher educators, for in a sense they are merely the agents who tend to reproduce the culture of our schools and thereby the society. Any member of the public could describe many ways in which the two types of school are different - this is not a function of training but does demonstrate that schools are cultural artefacts and not simply experimental sites of policy implementation.

Harris and Rudduck (1993) continued the rich vein of transfer research that utilised pupil-perspectives and again found that "academically less motivated students and those from working class backgrounds were more likely than others to suffer adjustment problems" (p. 322). One of the main thrusts of their work was the focus on the transformations within the peer group that occur following transfer:

> Transition is a period of personal reorientation where young people adjust their self-image in the context of encounters with a new peer group: it is also a period of social reorientation as young people lose friends and hope to make new ones. Moreover, status within the peer group is likely to change as students move to a different school. (p. 335)

Along with Measor and Woods (1984), Harris and Ruddock acknowledged the importance of the impact of changes in the friendship group following transfer. This

was one of the many "compelling rivals" for children's attention in the new school and provides the children with a difficult task of prioritising and balancing their energies.

Day's (1996) research on the impact of friendships on learners supported Harris and Ruddock's earlier work and so she counsels for the maintenance of some friendship groupings across transfer, a process that many schools now incorporate into their procedures. Day noted that "engagement with learning was not a primary strategy for building status with peers and may itself lead to being ostracised" (1996, p. 54). This is combined with the fact that "concern with image and status with peers appeared to be heightened at the transition from primary to secondary school" (p. 54). Moreover, Davis and Sumara (2003) have highlighted the extent to which social interaction is the primary goal of lesson activity for pupils. Mathematical tasks are merely a temporary distraction. We can therefore understand why Galton, Gray *et al.* (1999) highlighted, in their government-funded research, the need for further exploration of the role that friendships play in the move from primary to secondary school.

In the same year Nicholls and Gardner (1999) published their book concerning pupils' transition from KS2 to 3. In all of the research that has been cited so far there has been little reference to any particular subject and this book is no exception. There are a few brief, ill-informed comments about mathematics but the lack of any real substance highlights the need for research in the individual subject areas. What the authors do have to say about mathematics is that it "may be more vulnerable than English...and science...to pupils becoming jaded, perhaps as a result of lack of success or indeed by sheer lack of interest and boredom" (Nicholls and Gardner, 1999, p. 26). These are

clearly not the words of a mathematics teacher, but rather betray the authors' perspective on the subject. In fact this whole book has little to add to what was already known about school transfer up to that point. They are very much focused on systemic improvements as a means to smoothing the transfer process, which as I have argued, is an insufficient approach. At one point they describe a year six teacher who has "worked hard to prepare many of their pupils to level 5 in, say, mathematics" (p. 9) and question what will happen on the other side of the transfer process. This comment suggests that it was written by someone who has not taught a year seven all-ability class, in which unknown children have achieved a mixture of NC level three, four and five. In fact, the authors themselves undermine their argument by quoting that "levels are socially constructed abstractions, developed from an unproven theoretical model of testing and created in the minds of test developers and the like. They should not be allowed to become their own, or the only orthodoxy" (ATL 1996, p. 90).

2.5 SCHOOL TRANSFER RESEARCH INTO THE MILLENIUM

Those two decades of research activity have seen a broad range of studies but have not really changed the situation for children in schools. Punctuated by the introduction of the National Curriculum, which offered what turned out to be a false hope for improved continuity, pre- and post- National Curriculum studies of school transfer have had a similar range of foci. If anything there has been, mirroring wider trends in educational research, a move towards more qualitative studies of some of the social aspects of transfer. At the same time there remain optimistic voices that expect considerable improvement in the process. Another constant factor is the thinly veiled finger-pointing by some writers at the supposed perpetrators of the problem – teachers, and in particular

secondary teachers. Consider, for example, a Times Educational Supplement headline: "Teacher's *fail* to mind transition gap" (Ward, 2002, italics mine). Despite this gradual move there has been little real impact upon the processes as children themselves experience them, even though we now have a greater understanding of the issues surrounding transfer.

There are few major new studies upon which to draw, although a number of reports have kept the issue of school transfer firmy on the political agenda (Galton, Gray, and Ruddock, 2003; Ofsted, 2002). Hargreaves and Galton's (2002b) recent book brings together some of the latest thinking about school transfer considering in particular the developments over the last twenty years since the aforementioned ORACLE study. I have referred to it extensively already and will make continued use of it throughout this thesis as it further clarifies a direction for future research in this area. What is striking is the admission that:

> ...in some respects, when compared to what took place two decades earlier, the business of moving from primary to secondary school has changed a great deal. In other respects, however, particularly when considering pupils' day-by-day experiences in the classroom, fewer changes are detectable...
>
> ...classrooms seem to resist all the kinds of external pressure for changes in practice, with the result that the curriculum experiences of the present day year 7 pupils appear to be remarkably similar to that of their parents who entered secondary schools in the 1970s. (Galton and Hargreaves, 2002, p. 185)

This resistance to change, or rather the ability to largely reproduce the system that existed comes as no surprise and the question that needs to be asked is why this might be happening? Why is it that despite the concerted efforts of many educators and

politicians "there still exists a hiatus in some pupil's progress" (Galton and Hargreaves, 2002, p.187)? The authors then proceed to question whether or not there are structural limitations that inhibit the hoped for improvements. This is almost certainly the case and although school transfer has offered a range of research opportunities to scholars, it has reached something of an impasse. In order to move forward, and to make a genuine difference to children's experiences of moving school, the warnings about structural limitations need to be heeded. In addition there is a need for a more critical account of the processes whereby the inequities of thirty years ago still remain. In order to theorise this, in Chapter 4 I will make use of Bourdieu's sociology of reproduction, which is concerned with explaining the same systemic reproduction of inequalities in various areas of society. Recent sociological analyses of the transfer (Ball, 1997; 2003; Ball, Bowe, and Gewirtz, 1996; Reay and Lucey, 2003) have sought to understand the process whereby the middle classes have turned school choice policies to their advantage. However, in this study, such school choice discourses have not been a major factor, but rather the structuring mechanisms that function at the level of children's social and learning experience will be shown to be highly effective in perpetuating advantage/disadvantage.

In terms of mathematics learning and teaching, research evidence shows that the thing that children least look forward to when moving schools is mathematics (Galton et al., 2002). Moreover there still can exist "a clash of values and cultures" (Hargreaves and Wall, 2002, p. 40) between teachers of mathematics in the primary and secondary schools when they meet. Hargreaves and Wall go on to describe how several school

liaison programmes "revealed the continuing gap between primary and secondary cultures of learning and assessment" (p. 53).

Galton, Gray and Ruddock (1999) proposed key areas that need further investigation as part of the ongoing school transfer research agenda including subject specific research and an examination of how the breaking and reforming of relationships and social grouping affects children's progress following transfer. This agenda moves on from mere system adaptations, which is helpful in the light of Summerfield's (1986, p. 26) point that "little has been proved as to the effect of good organisational procedures on the individual child". However, the Government's policy response is necessarily aimed at systems. The National Curriculum has not secured curriculum continuity but the National Numeracy Strategy on the other hand, including as it does an unprecedented level of pedagogic prescription, might stand a better chance of achieving greater continuity through its drive for consistency of approach. However, here again we catch another glimpse of the real problem: primary and secondary schools are in many ways very different worlds with different philosophies, cultures and pedagogic practices. They are educational communities with different social rules and structures. This is the starting point for my own investigations: a thorough exploration is needed to understand the effect that this transplanting process has upon the developing child. My thinking moves wider than mere systemic change to consider wider influences on the learner (of mathematics), whether they are part of the education system or other dimensions of children's experience, for example, the family and peer group.

2.6 SUMMARY: TOWARDS A 'BIG PICTURE' PERSPECTIVE

Despite several decades of productive research into school transfer I have made it clear that many of the difficulties that were plain in Nisbet and Entwistle's early research are still very much apparent. An overriding question arising from this review then is why that is the case. Why have the policies and various studies not changed the situation in any meaningful way? Moreover, it is clear from the literature that little is known about the mechanisms whereby certain groups are disadvantaged. I am not seeking here to apportion further blame for the difficulties but rather to question how it is that this situation should be so resistant to attempts to transform it.

This study builds upon the qualitative studies concerned with children's identities and social experiences but seeks to go beyond the boundaries of the classroom to consider the influence of the family and wider social milieu. At the same time, in response to the paucity of research about subject specific concerns, the thesis will have a mathematical perspective.

Whitty explains how "education is...infused with, and dialectically related to, the bigger picture" (2001, p. 207) and it is this notion of the 'bigger picture' that I want to explore in this thesis. Having said that, what I am doing here is not a large-scale study but a collective case study of mathematics learners. Where it is a big picture approach is in the attempt to not consider one aspect of the transfer process or another but to explore the whole range of factors that combine to form the *mathematics learning landscape*. In other words how do family, schools and peers influence learning at the primary-

secondary interface? This is, therefore, a sociological study and this, combined with a focus on mathematics teaching and learning, makes it novel.

Another missing element of the research to date is an analysis of how certain groups of children come to be disadvantaged at transfer. I have shown that several researchers have highlighted the differential success of social groups in negotiating the transfer process. What is it about their particular situations that gives them a greater statistical likelihood of experiencing difficulties? Furthermore, what is the teacher's role in this process? The situation is a highly complex one, but I contend that a different approach is needed to shed light on why the situation has remained largely unchanged despite the external and internal initiatives that have been brought to bear upon this phase of the schooling project. Such an approach would look beyond school systems to the larger social systems, those complex networks of relationships whereby all social actors are continually positioned and repositioned. So I will consider the changes in classroom interactions between teachers and learners of mathematics at transfer, and between learners in and out of the classroom. This analysis is nested in, and understood in the context of, the socialising role of the family and the broader social milieu. This analysis of school, family and the peer group is set against a political backdrop of educational reform and cultural attitudes to learning, schooling and mathematics that I will argue are peculiar to the UK. It is this system, this *landscape*, which forms one of the foci of my study.

In addition there has been little attempt to detail studies of particular subject areas. This might have been due in part to the educational backgrounds and interests of those

conducting the research. Indeed when reading the research literature it is tempting to guess the educational origins of the researcher by the nature of their analysis, and I suspect that there have been fewer secondary subject specialists researching school transfer. Perhaps coincidentally there also appear to be more criticisms made of the secondary aspect of the transfer process. Here is an example of how educational research might need to be considered with an appreciation of the personal, social and educational history of those who carried it out.

3. SCOPE AND AIMS OF THE STUDY

Having concluded from the review of the literature that my study of school transfer and the learning of mathematics will need to explore the wider sociological context of learners, this chapter begins to explore some of those contexts.

I start by picking up some of the issues raised in the later part of the previous chapter and by introducing the notion of *learning landscape* that comprises one layer of the theoretical framework. I also foreshadow the use of Bourdieu's sociological theory of practice, which is the complementary layer of the theoretical framework of Chapter 4.

A large part of this chapter is concerned firstly with the two schools in which the study was situated and secondly upon the formation of a smaller group of children that provided the case data of Chapter 6 and onwards. I finish by considering the limitations of the study. These are partly related to the case study methodology: the children and schools that were chosen to be central to the study. Due to the inter-relatedness of this chapter and the theoretical and methodological consideration that follow, the limitations are discussed in part here but there is also related material that arises later in the thesis.

3.1 INTRODUCTION

My own experience of working with children who have recently moved schools confirms that the processes involved, both for the pupil and the teacher, are highly complex. As a teacher I was aware that I was forming subjective judgements on the basis of minimal information, maybe National Test scores and teacher assessment levels, or even prejudiced information, for example how an older sibling had 'performed', either with regard to behaviour or attainment.

Sitting in the primary school staff room during fieldwork, and speaking to the class teacher of year six children before they move, revealed how much was known about the children and their families. It was not just the current teacher who knew about each child, but it seemed that most staff could talk with knowledge and insight about most of the year six children, their families and their histories. This experience indicates the magnitude of the social task of school transfer whereby a large amount of knowledge about the child is 'lost'. The primary school teachers have a substantial amount of historical and contextual knowledge concerning the very things that I am primarily concerned with in this study: the interrelation of family and friendships influences and (mathematics) learning dispositions. However, if primary teachers' knowledge is biased in the same ways that I will show the secondary teachers' initial judgements to be, perhaps it is worth treating this data with caution and possibly welcoming a fresh start. That there is useful data concerning children that is not passed on in a usable form to the secondary school teacher is clear, although any secondary teacher trying to access this data would need to recognise its subjective nature.

Since the secondary school is much bigger than the primary school and the number of relationships far greater, there is every possibility that this potentially helpful knowledge will never be recovered. At very best, it will be fragmented amongst a large number of teachers. There might be useful material in the child's file, which is passed on to the head of year in the new school, but I don't know of any secondary school teacher who has spent considerable time looking through these files. At best he or she will receive a detailed spreadsheet containing assessment data. It is then the responsibility of the teacher to interpret this information as best as they know how and there is no social context with which to frame this data.

From my work with the primary teachers it is clear that most of their knowledge about children is not recorded in any way useful to another teacher. This knowledge consists of a number of subjective, detailed, educational and family histories of each child. These are largely retained within the minds of the teachers and shared through staff room discussion by virtue of the fact that a large proportion of the school staff have taught these year six children. Moreover, if this data could be recorded this social knowledge would be necessarily overwhelming and complex thus probably rendering its future use unlikely. My own data collection reveals that teachers know an incredible amount about the child, not simply from their own experience of teaching them but from watching them develop throughout their primary school years, from discussions with parents, etc. Such professional knowledge is not easily articulated and has reduced value if the receiving teacher has no knowledge of the child or family, but this example serves to show the considerable impact of relationship changes at the transfer point.

This is, no doubt, one of those structural limitations to which Galton and Hargreaves alluded (2002, p. 189).

This loss of knowledge is one side of the 'fresh start' process. We are more likely to hear about the other side of the 'fresh start' coin, that "there is...a lack of continuity across the curriculum because teachers in the new school prefer to make a fresh start" (Galton and Morrison, 2000, p. 444). However, on the same page Galton and Morrison describe "the pupils most "at risk" for whom the promise of the fresh start soon evaporates and schooling takes on the same day-to-day patterns as was the case in the former feeder schools". The idea of fresh start thus has a positive connotation of hope for some children, but I will also argue that it is a false hope (see Chapter 10).

Another structural limitation is the changing relationship of the parents to the teachers and the institution. Most of the parents of the children that I have worked with felt that transfer presented them with a discontinuity in their own support for, and of, their child. They no longer had access to teachers or buildings; the home-school liaison process had become depersonalised, reflective of the move away from the family-like primary school to the more bureaucratic educational structure that is the secondary school. In addition there is the important place of friendships and the impact of reconstructed peer groups upon the child that featured prominently in the reviewed literature.

Now all of these social concerns are painted on a historical backdrop of school organisation and culture. The two types of school are in many ways culturally dissimilar and this disjunction is historically determined; it is part of the broader culture of the UK.

Measor and Woods (1984) summarise the historical background to the UK school transfer points very effectively (p. 172-176). They demonstrate how the current situation is culturally embedded and not simply "imposed on school communities by education policy makers", as Rice (2001, p. 373) portrays the current situation in the United States to be. Most parents have been through an essentially similar process of moving from the relatively safe environment of the primary school to *the big school.* Each of the parents involved in this research remembered their school days and had their own perspective on the purpose and efficacy of schooling. These attitudes are enacted through dispositions that tend to be reproduced in the children. Therefore we cannot consider children transferring between schools in isolation from the broader culture, although the nature of the dynamic relationship between school culture and the broader culture of the UK is not easy to comprehend as it is so taken for granted as 'normal'.

In the light of these considerations I contend that in order to explore school transfer properly one needs to consider the various layers of social and cultural influence which affect the child. This research aims to bridge macro and micro-sociological analyses. It recognises that the process of schooling is enacted within society but that also society is in some way constructed, or re-enacted, through schooling. The macro-sociological perspective will partly be explored with the use of a metaphorical tool that describes children as being shaped by and shaping *learning landscapes.* Moreover, rather than being a static system the *landscape* is shown to be an evolving network of relationships between all the actors comprising the society, not just those 'in education'. Whilst this metaphor, which is developed in the next chapter, is helpful for my purpose it is by no means fully satisfactory. As metaphor it affords certain insights but it has limitations.

What it does enable me to do is consider how various influences affect the learning culture of schools and it provokes some questions regarding a relocation from one environment to another.

Building on the *landscape* metaphor I will focus my theoretical framework on the sociological tools of Pierre Bourdieu. His notions of field, habitus and capital have underpinned the design of this research and helped to focus the outcomes of the study. These tools are a means by which I can move from the macro-level *landscape* analysis to the micro-sociological analysis of family, peer and classroom interaction. As Reay explains, habitus "constitutes a mechanism for responding to the troublesome distinction between macro and micro levels of society" (Reay, 1995, p. 359).

There is a social-reproduction function carried out by schooling to which sociologists, including Bourdieu, have drawn our attention (Bernstein, 1977; Bourdieu and Passeron, 1977; Giroux, 1983; Halsey, Heath, and Ridge, 1980; Willis, 1977; 1983). One of the aims of this study is to comment on this process in a number of case study families and demonstrate how school transfer contributes to this reproductive cycle. I use the term reproduction here not in a deterministic sense whereby social clones result but in a way which allows for the incorporation of evolutionary processes and probabilistically likely educational and life trajectories. School transfer is a critical point in the child's educational career so I will show how the process of school transfer is also a critical point in the reproduction of class based perspectives on education and schooling.

In addition to exploring the reproduction of social distinctions I am focusing my study of school transfer on the mathematics learning experiences that the children have in schools. Mathematics is acknowledged by many to act as a social filter, a gatekeeper, whereby those who have acquired a certain proficiency (itself dependent upon degrees of economic, cultural or social capital) are privileged with certain opportunities that others do not have (Bourdieu, 1998b; Bynner and Parsons, 1997; Davis, 1993). School mathematics is a powerful influence on the future opportunities of children, through the way in which it acts as a gatekeeper that allows and denies children access to future educational and employment opportunities. As Bourdieu explains:

> Often with a psychological brutality that nothing can attenuate, the school institution lays down its final judgements and its verdicts, from which there is no appeal, ranking all students in a unique hierarchy of all forms of excellence, nowadays dominated by a single discipline, mathematics. (Bourdieu, 1998b, p. 28)

In addition to this final judgement there are social inequalities knowingly and unwittingly reproduced in the mathematics classroom (Gates, 2001). These arise in part through the actions of teachers whose 'natural' classroom practices are far from neutral but are in fact the strategies by which the dominant social classes act so as to restructure the social-space of children in ways which favour their own kind. As such, the analysis of the data will lead to the development of a model that describes the process of repositioning which takes place in the initial weeks of the new school. Here teachers and children unwittingly collude to ensure that social continuity exists when moving schools.

My collective case study approach, examining in detail the contexts, experiences and responses of four children moving from the primary to secondary school, uses several

qualitative research methods: participant observation, informal interviewing and video diaries. The latter research tool was used to great effect and enabled me to analyse the children's habitus in ways that might not otherwise have been possible within the constraints of my research. These mixed methods will be described, justified and theorised in Chapter 5.

3.2 CHOICE OF SCHOOL AND SAMPLE

When I began my research it was to be an action research project conducted within the family of schools in which I worked. My original intent was to consider the continuities and discontinuities in the process of teaching and learning mathematics in the two schools, with the express aim of improving the process of school transfer for which I had responsibility. During the early phases of the research this project became more sociologically focused and then following the transfer process the emphasis on social reproduction and repositioning emerged. This was largely due to circumstance: the ineffective data transfer process revealed that teachers were able to surmise, with reasonable accuracy, prior achievement and background of children using a range of social and academic cues.

I approached two of the 'feeder' schools, both with socially and culturally mixed catchment areas and both being what could be described as thriving schools. One of the two had an Ofsted inspection due in the autumn term and declined the invitation to be involved in the research. Consequently I planned to conduct the research in just one school and, considering the nature of my study, reckoned that to be appropriate for my collective case study. The detailed cases of initially six children, their friends and

families would allow me to conduct a fine grain qualitative sociological study of the transfer. Moreover, of the two year six classes in that primary school, I decided to work with one and within that class to focus on one mixed-ability table of six children. After I had set up the initial parameters for my research I left the school and took up my post at the University. This change of context forced me to reconsider whether I should, within the framework of my new job, change the design of my study. After much discussion and deliberation I concluded that it was of great value to continue in this particular school context, as I had a privileged position, both in terms of access and prior knowledge, that could potentially be useful in the research process. To be able to carry out my school-transfer research in a situation where I was very familiar with the transfer schools would afford to me insights not generally available. The converse of that argument is that my judgement might be somehow obscured by my taken for granted systemic knowledge, so the need for critical reflexivity was essential. Secondly I had known the primary teachers and head teacher of the primary school for a number of years and they were very willing for me to conduct this research in their school. Thirdly, having taught within the family of schools for many years I already knew, or had taught, some of the children's older siblings and had some knowledge of, or had met, some of their parents. To start with such background data was considered to be helpful to my research design but I had to work hard to notice and problematise the 'ordinary', those practices and dispositions that were so like mine or so ingrained in my thinking that I didn't recognise their peculiarity. Within my academic post I was able to conduct far more extensive field research than had initially been considered possible.

My research has included a lot of time in mathematics lessons for a number of reasons. Firstly this is my own subject specialism and has been my point of contact with the primary school teachers. Secondly, when the children moved to the secondary school I was working within a very familiar environment. There are of course disadvantages to this position but my initial aims in the project were to understand and improve that part of the process with which I was most closely involved. Thirdly, I have already referred to research evidence that describes mathematics as a gate-keeper, a social control mechanism whereby people are given access to, or denied educational and employment opportunities on the basis of their demonstrated mathematical competence. Here my concerns with the social reproduction effected by schooling are overlaid with an interest in mathematics' contribution to this phenomenon. Having said that, this research is not simply about mathematics but is simply using this to frame a focus for the study. My conclusions will be seen to be more widely applicable than in the mathematics classroom as they explore the social nature of classrooms, school transfer and their wider context. This breadth is retained partly as a result of the fact that the children, when given the opportunity to set the agenda with regards the data collection (for example in the video diaries) contribute data that is much more far-reaching than mathematics. Finally, I wanted to focus on the experiences within one subject area so that I could have the same limited view of the children as the secondary mathematics teacher would have. The difference for me is that I already knew the children very well. I knew about their social backgrounds, their mathematical progress in the previous year, their strengths and weaknesses, their ability to maintain positive relationships and so on. In a sense I carried with me some of that knowledge that I described earlier as being

'lost' at transfer and so could consider the children and teacher's actions in the light of this knowledge.

3.2.1 The primary school

The primary school is located in an area of mainly privately owned housing in a suburb of the city. It is a popular, two-form entry junior and infants school with a well-established and relatively stable staff. The catchment area comprises families from a range of social classes but this distribution is skewed to the middle classes, with a greater proportion of parents having higher education qualifications than is typical nationally. The number of children in the school from minority ethnic heritages is typical for the region. The precise figures for these I do not consider to be significant for this collective case study which includes children from a range of social contexts. If anything the children in this study do not accurately reflect the school mix. The most recent Ofsted report (which is not referenced for reasons of anonymity) records that "pupils' attainment on entry to the school indicates a below average social development, slightly below average attainment in English, and slightly above attainment in mathematics".

The above sets the scene for the classroom where I carried out the first year of my research. Of the six children that were the focus of the fieldwork in the early part of the research:

- four of them live outside of the school catchment area; one of them travelling in from the city centre;
- only two have parent(s) who have attained post A level qualifications;

- four of them live with only one of their natural parents;
- one has an Asian heritage.

So, this is a broadly comprehensive primary school but the case study group does not in fact reflect the predominantly middle social class backgrounds described above.

The Ofsted report goes on to say that.

> (this) primary school is a very good school.
>
> What the school does well:
>
> - Provides a good standard of education for all its pupils, particularly in English and mathematics.
> - Provides very good cultural and moral development for pupils.
> - The support, guidance, and welfare of pupils have high priority and are good.
> - Provides a good quality of teaching, particularly for pupils of age 7 to 11 years; high standards are expected by teachers and achieved by many pupils.
> - Ensures pupils' attitudes, behaviour, and relationships are good throughout the school.
> - Provides an orderly, calm, and happy environment in which to work.

My research study is focussed on the teaching and learning of mathematics and the Ofsted report has the following to say about mathematics in the school:

> Pupils' attitudes to mathematics are good throughout the school and, older pupils particularly, enjoy the challenge of the investigative work. Most pupils work very hard and concentrate for long periods of time. In group activities they share ideas well, and are prepared to listen to each other as well as being confident in their own abilities. The presentation of written work is generally very good.

> The quality of teaching overall is good, with a high proportion of very good teaching in Years 4, 5, and 6. Most teachers are confident and plan lessons based on their accurate assessment of pupils' achievements. Where the planning is good, the teachers know exactly what skills, knowledge, and understanding the pupils should have by the end of the lesson. This was clear in a Year 4 lesson on weight where the pupils were 'to learn how to read scales that are calibrated in ones, twos, fives, or ten grams'. (p. 25)

These and other comments regarding the mathematics in the school were written before the National Numeracy Strategy had been fully implemented and the description of mathematics in the school is not a compete reflection of what was happening during the research. The investigative work described above resulted in part from the collaboration between primary mathematics co-ordinators and the secondary school. What can be said from my numerous observations of the class teacher with whom I worked is that she was, in my opinion, a good teacher and the children knew mathematics to be her favourite subject. She had a positive reputation amongst the parents and maintained a purposeful, productive classroom. The children appeared to enjoy being there and she had a good rapport with the class. However, her mathematics teaching was in several ways quite different from the practices of the secondary school mathematics teachers and my analysis in the later chapters will explore this in more detail. The children progressed through work which was structured in a not dissimilar fashion from the lessons that they would experience at the secondary school; "the pedagogic diet in year 6 and year 7 is remarkably similar" (Galton and Hargreaves, 2002, p. 194). Two of my group often received extra support, either in the classroom or in small 'booster group'. One aspect of the primary mathematics that was different was the potential for greater continuity since each day had a slot for mathematics, the 'numeracy hour' (now re-

branded as "the daily mathematics lesson"). There was also time in the day to finish off pieces of work and this was sometimes used to allow those who had not made sufficient progress during the lesson. The children were still of the opinion that speed equated with ability; their interview comments such as "I'm as good as X 'cause we nearly always finish at about the same time" were recorded on a number of occasions. This reflects the transition that Nicholls (1978) has highlighted between the ages of 10-13. During this period children move from attributing their success, or lack of it, from effort to ability, but not only is this change a developmental one but there is gender separation here regarding attitude to mathematical success (Jackson and Warin, 2000).

The year six classroom was adjacent to the main hall where the children had a daily assembly, ate lunch, did their PE lessons, etc. On the other side of the classroom was situated their cloakroom, some toilets and the door to the outside with the playground some fifteen metres away. Theirs was a typical primary classroom; clean and tidy with impressive displays of children's work on the wall together with artefacts collected from homes and holidays to support aspects of the class work. The results of their design lessons were proudly on display and each child had their name suspended in hieroglyphics above their seat. Each child's work was kept in trays near to their table. Each table comprised six children of mixed abilities, both boys and girls. These groups of children were rearranged periodically as and when the teacher felt it was helpful to the children.

The classroom had its own computer, which was used frequently and a small library in the carpeted corner of the room. Next door to the classroom on one side was one of the

infant classes, which used their room as a corridor to get to the hall. On the other side was the newly fitted computer room, which had just come into operation by the end of the children's time in the school. Anyone asked to go to the office had to walk the twenty metres across the hall to get to where the offices, head teacher and staff room were situated.

Daily whole school assemblies were held and the year six children sat at the back in their two class groups. These events, and the highly contrasting experience that they had in year 7, highlight the huge culture change that the children had to undergo in the move. They would arrive at these assemblies to the sound of a piece of music, of varied styles. The head teacher might tell them a short story with some kind of underlying moral principle and there would be some celebration of the achievement of individuals or groups. Here the togetherness of the primary school was clear to be seen; all of the children and their teachers in the same place at the same time, respectful, at least in gesture, of one another's achievements. The same messages were being given to all the children and misbehaviour dealt with quietly and quickly. They entered and exited the assembly hall sensibly and were soon back in their classrooms to continue with their studies.

Another aspect of the togetherness of the school was the staff room. Clearly a smaller school has fewer staff and therefore a significantly reduced number of possible relationships. What was striking about these staff room observations was the apparent depth of relationships between the predominantly female, well-established staff and the depth of teacher knowledge about families circumstances and how these were affecting

the children. However, unlike the secondary school where a teacher who might have taught several hundred of the children at the school never really gets to find out much detail about the individual circumstances of most of the children, most staff seemed to know a lot about most children. This might have been due in part to the stability of the staff but whatever the reasons this aspect of this school family was not something that is paralleled following transfer. This differing knowledge base of teachers in year six and seven is not a point that is raised by the government or media when they are questioning secondary teachers' effectiveness in light of the poor progress made by some children in year seven. This is why a larger system perspective is important aspect of better understanding the school transfer process.

3.2.2 The secondary school

Whilst I was conducting the primary phase of my empirical work, the secondary school which was to become the destination of five out of the six case study children was undergoing its second Ofsted inspection.

This 11-18 comprehensive secondary school has around 1350 pupils who "come from the full range of socio-economic backgrounds, with a balance between those who experience social and financial advantages and disadvantages" (unreferenced Ofsted report). About one in ten pupils come from ethnic minority heritage and there are an above average number of children for whom English is an additional language. So it is described as "fully comprehensive...with similar proportions of pupils with above and below average standards for their age".

The report goes on to describe a school that is "good and improving", with good results in national tests. This is associated with largely good teaching and the positive attitudes of all but a minority of pupils who "undermine the standards and ethos of the school".

In terms of entry profile the report records that:

> Pupils' attainment when they join the school in Year 7 is broadly average. Their results in National Curriculum tests at the age of eleven over the last few years have been average in English and mathematics; above average in science. Results of cognitive ability tests taken by pupils in Year 7, which aim to measure potential, show a similar picture.

By the time pupils reach year nine they have made progress, which in mathematics leads to a conclusion of "good achievement", with good teaching and management being "significant factors responsible for the good results". The part of the report focusing on the mathematics department says:

> Overall, teaching is good. This is particularly evident in Years 7 to 9 where lessons begin with challenging teaching of numeracy. The quality of teaching, however, is uneven. There is too wide a gulf between the best teaching, which is excellent and the least effective, which is unsatisfactory. Some pupils benefit from stimulating lessons, conducted at a brisk pace. In these, teachers have high expectations, challenge pupils individually by direct, searching questions and exercise firm but good-humoured control. In some other lessons, teaching is pedestrian and pupils are not given sufficient challenge. In some cases this contributes to deteriorating behaviour. Support for lower attaining pupils in mixed ability classes is good but infrequent. (p. 34)

This Ofsted report only presents one perspective on the state of mathematics teaching as the year seven case study children found it. Those judgements made from a few

mathematics classroom observations made in an unusual week by one person who was unfamiliar to the school are somewhat subjective. However it is probably correct to deduce from the report that children's experience in the mathematics classroom would be dependent in part upon which teacher they end up with.

Although described as a 'good' school not all of the staff were happy there, as will be seen later. In addition, the mathematics department was not unified, at least in terms of its pedagogy; different historical traditions sit (sometimes uneasily) together. These different philosophical and pedagogical positions could be seen in part by the varied teaching styles employed by the teachers in the department. The differences between the way that the staff work together in the feeder school described above and the secondary school are considerable. This is due in part to the size of the staff and therefore the extent of the relationships that can be formed between the teachers. The Ofsted report identifies the problems caused by a few older children but this has indeed been the case for the last decade at least, at least from my perspective as a member of staff and my ex-colleagues' opinions. There is something about the ethos of the school, which is perpetuated through the staff, systems and school culture and shaped by parental attitudes, which has rendered it ineffective in dealing with this minority of students.

What we can see from the Ofsted comments about the mathematics teaching is that there is, in the inspectors opinion, some kind of luck of the draw with regards the quality of teaching. Here again I must point out that an Ofsted judgement of quality is not the only judgement of quality or indeed a measure of quality at all, so we must exercise some

caution in using such pronouncements. We can probably conclude that the inspector saw what he considered to be significant differences in teaching. I might expect to come to similar conclusions about difference but would, at the same time expect to see different patterns of difference. The mathematics department has for a generation benefited from some enthusiastic and well qualified mathematics teachers who have contributed innovative resources, inspired good teaching and provided effective leadership, not only within the school but to mathematics educators both locally and nationally. These have moved on to senior school posts, advisory roles and teacher education. What can be said about these various team leaders is that their personal philosophies and epistemologies of mathematics education have not always been in harmony with one another. Therefore there exists within the department remnants of practices and ideologies that whilst allowing for diversity could be described as discordant.

- Is mathematics primarily a 'service subject', a toolkit of skills to be acquired, or largely a process of exploration and problem-solving?
- Is it socially constructed or absolute and pre-existent (Ernest, 1991)?
- How important is it that the department fully engages with school and government initiatives?
- What are ultimate markers of success in teaching and learning of mathematics?

A series of heads of department have answered these questions in very different ways and their resultant leaderships have had quite distinct influence upon the nature of teaching and learning of mathematics in the department as a whole, and in the classrooms of the different mathematics teachers.

During the time of my empirical work, the secondary mathematics department was implementing change. For the first time the newly arriving year seven cohort would be ability-grouped or 'setted' for mathematics after the first two or three weeks. Classes were taught in their all-ability tutor groups for these two weeks whilst they completed the bridging units of work that they had started in their primary schools (QCA, 2000a; 2000b). During the early stages of year seven the year group completed Cognitive Ability Tests (CATs) which supplemented other assessment data. The decision-making process that established the ability groups was dependent upon KS2 National Test scores and teacher judgement. Whether or not that test data is useful, reliable or fair is doubtful in two ways. Firstly there is strong evidence to show the socially differentiating potential of SAT tests (Cooper and Dunne, 2000) that will be discussed in Chapter 9. Secondly Moody (2001) has highlighted the poor correlation between KS2 and KS3 test results. He shows that the best correlation between KS2 and 3 tests is in mathematics but even then they are not strong, and not as good as those found between CATs and KS3 National Test results. Criticisms have been made of secondary teachers for the way they have handled transfer data. For the secondary teachers in the mathematics department the KS2 tests results were one source of data that was used alongside other qualitative and quantitative data to inform the setting process. I did spend some time with the year six teacher looking through the maths results and the teacher was surprised by a few of the scores, but not of the children amongst the case study group. Nonetheless, on the basis of the test scores and her own sense of the children's ranked mathematical ability, she could see how a few of them might end up in ability groups other than the ones she would have recommended. As it turned out, the data did not get passed to the classroom teachers for several weeks. This was

unexpected but did allow me to research a process of socialisation into the mathematics classroom that could well have been obscured under different circumstances but in fact became a major area of the study.

Other impacts on the child of the move to the new school were the nature of the buildings, the size of the campus and the number of other children and staff that were all unknowns to the new arrivals. The spatial arrangement of classrooms and need for regular movement around the site creates both opportunities and difficulties, some of which surface in the children's narratives of their early experiences. What I have found is no different from the findings of many of the studies that were referred to in Chapter 2. Consequently I will not rehearse those findings in this thesis, other than to explore the relationships between the nature of teaching and learning and the learning environment itself.

3.2.3 Selecting the case study group

Having spent some time in the two year six classes I identified a group of children in one of the classes that upon first meeting appeared to offer a lot of research interest, as I will explain below. They had been grouped together as part of the teacher's mixed ability teaching strategy and my interest in them was sparked by my first encounter with them.

On one of my early visits to the school, whilst working with the other parallel year six class, I had asked them why they thought they were sitting together in specified groups. Whilst some of that class of children thought that it was because they were of similar ability, others thought that it was merely a random (mixed gender) group. Still others thought that it was due to the fact that they came last on the first day of term and one was moved from the telephone (in this 'mobile' classroom) because he was afraid of answering it. One group of boys thought that they had all been put together because they were clever. Consequently, when I first met the year six class from which I would take my case study children, I was interested to know whether they held a similar mixture of beliefs about the teacher's grouping rationale. However, not one of the groups could suggest any plan that the teacher might have had. Impressed by this lack of response and yet wanting to engage with them I casually asked them what they thought about the mathematics that they were engaged in. That elicited a very different response:

Sonya: I hate maths

Marie: Maths is my favourite subject and it's my mum's favourite subject too

Andy : Now lots of people have told me that Matt's really good...is that right? (he smiles, embarrassed, as everyone agrees)

Andy: What about you Toby?

Toby asked me whether I knew his sister Hannah. I did. She had been highly successful throughout her time at the secondary school. I thereby immediately formed an impression of how capable he might be and so I asked him about this:

Andy: Do people expect you to be good at maths because your sister is?

Toby: No not really...apart from my Dad, he wants me to do well.

Stacey didn't respond (she had an older sister that I hadn't met at the secondary school). Edward adds that he is pretty good at maths.

In the light of my interest in analysing the socially acquired learning dispositions of children, and considering the factors (peers, parents, teachers, etc.) that shape the *learning landscape*, several of their comments were of potential interest. I had asked the same question to some other groups of children but with this group I got comments about parents attitudes from Marie and Toby, the impact of siblings from Matt, Sonya and Toby, the effects of peer acknowledgement on Matt and the interplay between this group of children. Their attitudes were a mixture of the highly positive and quite negative, some 'loved' mathematics and others 'hated' it, some appeared to be very confident and others were not, and so on. There was plenty of reason to conclude that this group of six children would be an interesting group to focus my research on through the development of six case studies of transfer. Not only did they have different perspectives on mathematics but they also represented the broad range of social backgrounds that I have identified above.

The following table indicates how they were seated and records their NFER standardised scores from the previous two years, merely for the purposes of indicating the mixed-ability nature of the group. I do not mean to place too much significance on the scores themselves as these are indeed related to their social positioning as I have already mentioned (Gillborn and Youdell, 2001).

Sonya	Marie
82 86	113 111
86 87	103 106
Stacey	Matt
107 86	127 134
89 91	118 131
Toby	Edward
119 100	127 117
106 110	130 122

The four numbers are NFER scores

English: bottom row, Maths: top row

Year 6: left column, Year 7 right column

3.3 LIMITATIONS OF THE STUDY

The limitations of this study are various. There are those that arise as a result of my chosen research methods. I will problematise the individual techniques in Chapter 5 but here I will focus on the claims I make in this thesis, their potential for generalisation and the epistemological challenges faced by the qualitative social researcher.

What was interesting even from the outset of the research was that just as Youngman (1978) could find six categories for children at transfer so I could see six very different children in my own study. Some of them were of similar ability as measured by National Test scores (the main data transferred to the secondary) but the reasons for this

were arguably very different. One-off educational assessments are not a fair reflection of children's educational trajectories. In the same way these children might respond similar 'well' or 'badly' to moving schools, in terms of their academic and social progress, but this could be for very different reasons.

On the one hand I am arguing that each child is unique and has a distinctive habitus or *learning landscape* position. This does not mean to say that this research adopts a purely subjective, individualistic perspective, as there is also a more structural dimension to my thinking, based on Bourdieu's sociology. The individual habitus is unique but by its very makeup betrays relationships to all of the others in the field and the larger social system. Hence I want to hold the individual and the social system together, the micro and the macro, the subjective and the objective. I want to avoid the extremes of outright structuralism as well as the freedoms of subjective relativism. Consequently Bourdieu's sociology is very attractive, as he has provided a theoretical framework that tries to deal with some of the dichotomies that have divided the social sciences (Bourdieu, 1977; 1990).

I am not saying that larger quantitative studies are not of value but would simply question whether assigning each of my case study children to Youngman's six 'types' is actually helpful. Conversely, by conducting a collection of qualitative case studies, I am not ruling out wider implications being drawn for other children at transfer, although admittedly I am not looking for, nor do I expect to find, tidy solutions. My thesis provides a theoretical, descriptive perspective on this particular context. Here again I draw inspiration from Bourdieu:

> My entire scientific enterprise is based on the belief that the deepest logic of the social world can be grasped only if one plunges into the particularity of an empirical reality, historically located and dated, but with the object of constructing it as a "special case of what is possible", as Bachelard puts it, that is, as an exemplary case in a finite world of possible configurations. (Bourdieu, 1998b, p. 2)

It is interesting that here, towards the end of his life he summarises his work as being based on a belief. Similar belief also underpins this thesis, which I present as such an 'exemplary case in a finite world of possible configurations'. Moreover Bourdieu's theory of practice provides me with the tools to generalise from the particular. This is because individual habituses are not individual but the embodiment of broader social structures and struggles. The individual remains unique but is somehow representative of those with a similar set of dispositions, those from the same part of the classified social space. So subjective individualism and objective structuralism are held in tension.

What this work will examine are the ways in which socialisation experiences within the family play a key role in shaping the child's dispositions to life, schooling and, in particular, to the learning of mathematics. I will also show how, during this transfer period, peer relationships become more influential factors in the evolution of children's dispositions to learning. Perhaps most importantly, I will be accounting for the contribution that the classroom teacher unwittingly makes to the perpetuation of the status quo of educational inequity in the mathematics classroom. In this way, by focusing on the way that mathematics teachers and learners collaborate in the process of social relocation into the secondary mathematics classroom, I will question notions of discontinuity at transfer and argue that there is actually a strong sense of continuity in

children's experience. However I want to go further than this and suggest that if children of the different social classes and class fractions have different education trajectories before they arrive at the secondary school then the transition causes these trajectories to be differentiated further. (See Figure 13 in Chapter 10)

What I have not done in this research and so have been unable to include in this thesis is a longer study of the effects of the move to secondary school within the mathematics context. The empirical work was centred on the primary phase and then on the first term in the secondary school. This covered the induction, setting process and first term's work. At this point children could be moved into different groups and so I made a decision to cut off the data collection at this point. One of the reasons for this course of action was the increased complexity of the data as the teachers and children's knowledge and relationships developed. Detailed study of the initial socialisation process was made possible in part by getting children and teachers to reflect upon their practices in these early days. This produced the rich vein of empirical data that is utilised in this thesis

3.4 SUMMARY

In this chapter I have begun to develop my case for an examination of the 'big picture' that was the conclusion arising from my review of the literature. I have outlined the embedded or nested nature of the process of school transfer in wider school cultures and processes and those of UK culture at large. However, at the same time as wanting to explore the whole system I acknowledge that this will be done at a local level. The choice to work in this context, a kind of culture core-sample, through the employment of

case study methodology does not discount generalisation. I shall explain in the next two chapters how both case study and Bourdieuan sociology incorporate the potential for generalisation from the particular.

I have described the schools that were involved in the study. The decision to work in these educational contexts is clearly related to my own work circumstances and life history. In addition it is clear that this single pairing of primary and secondary school is not representative. However, as I have already suggested above, the nature of the methodology will enable me to make generalisation from the specific life contexts which comprise the study.

Finally I have considered some of the limitations of the study. Some limitations arose through the course of the research as the circumstances changed whilst at the same time these changes made other avenues of inquiry possible. Other limitations arise as a result of the theoretical framework and qualitative methodology that have been used, and I will now examine these in more detail.

4. THEORETICAL FRAMEWORK

This chapter explores the two theoretical layers that framed the empirical research: the metaphor of *learning landscapes* and *theory of practice* of Bourdieu.

The *landscape* metaphor will be developed first as a means of looking beyond the school context of mathematics learning and school transfer. This involves consideration of a range of social and historical influences upon children. It uses metaphor theory to develop an understanding of how four components of geology, climate, human influence and time offer a conceptual imagery that can be used to explain some of the resistance to change described in Chapter 2. This model is more concerned with the 'big picture' and complements the use of Bourdieu's work.

The second, and more substantial, layer of the theoretical framework is Bourdieu's theory of practice, which offers another means of exploring the complexity of children's experiences. The tools of habitus, field and capital are introduced and it is these tools that will be put to use throughout Chapters 6 to 10. Bourdieu's concern to explain the mechanisms whereby social structures and practices are perpetuated without reference to rules is useful in my research context.

4.1 INTRODUCTION

As I have described earlier, I want to bring together two theoretical tools here. Firstly I will use metaphor to construct a view of mathematics education that is a 'big picture' perspective. The use of the spatial language incorporated in the metaphor gives it a certain propinquity to the work of Bourdieu, whose concept of field provides an explanation of the relationships and power differentials between actors in homologous social sub-spaces. The employment of these two tools is reflected in a kind of symmetry through the remainder of the thesis. It is the big picture focus outlined in the introduction to the thesis that has provided some of the rationale for the study and to this I will return in the final chapter. This macro-level theorisation wraps around the substance of the research methodology and analysis based upon the theory of practice that Bourdieu developed.

The substantive part of the thesis focuses on habitus, field and capital, i.e. the habitus of children, parents and teachers, and how the strategies of the habitus of the various actors structure relative 'positions' in the mathematics classroom. So, in essence, the remainder of the thesis begins with a sociological view of mathematics education (in the form of the *landscape* metaphor) followed by an account of Bourdieu's theoretical framework. From there it "plunges into the particularity of an empirical reality" (Bourdieu, 1998b, p. 2) and then through the analysis and conclusion it returns to the big picture to consider the general implications of the particular case studies.

4.2 MATHEMATICS LEARNING LANDSCAPES

4.2.1 A political perspective

On the 21st March 2002 the then Rt. Hon. Estelle Morris, Secretary of State for Education and Skills made a speech entitled: "Transforming Secondary Education: the middle years". The UK government, relentless in its pursuit of raised standards and national targets, is focussing its attention on the 11-14 age range and is currently in the process of implementing The Key Stage 3 Strategy. Their response to the problems of poor student behaviour and motivation comprises the "three pillars" outlined in the speech. The third of these pillars states that the "secondary *landscape* itself will need to look substantially different" (Morris, 2002, p. 8, italics mine). The three key features of this landscaping process will be *innovation*, *diversity* and *collaboration* but these priorities remain fixed within the locus of the education system itself and fail to take account of the overarching socio-cultural climate that this education system is embedded in.

The following exposition of a *learning landscape* metaphor will raise questions about whether the government's plans can fulfil their desired goals as they fail to take account of key aspects of the larger learning culture in the UK. In order to understand sufficiently well, and change, the learning climate in Key Stage 3, enabling the transfer from Key Stage 2 to be more successful, a more holistic, systems approach is required, such as developed by Boudon and Bourdieu:

> Both Boudon and Bourdieu are 'systems' theorists; they are more interested in exploring the relations of systems of factors than trying to assess the importance of individual factors.

> Both contend that the concern for precise measurement of individual or cumulative 'effects' of factors detracts from the much-needed focus on how factors combine and form systems. Both argue that without a 'systems' view, cross sectional analysis can unwittingly either magnify or underestimate the effects of factors. (Swartz, 1981, p. 326)

From a psychological perspective Bronfenbrenner's (1979; 1995) ecology of human development echoes this concern. The notion of 'development in context' is central to his work and the nested structure of the systems has a certain propinquity with the theoretical model below. The idea that the education system can be removed from its social and cultural context and tinkered with is unsatisfactory, because the culture and its education system are intertwined. As I shall show later in this chapter, Bourdieuan theory demonstrates how education contributes to the reproduction of the dominant culture (Bourdieu, 1973; 1974; 1989; Bourdieu and Passeron, 1977). The *learning landscape* metaphor suggests that there is no guarantee, and plenty of reason for doubting, that any change effected through the implementation of government initiatives will deliver the desired outcomes in the long term.

The principal focus of my research is the relocation of children from primary to secondary school, particularly in the context of teaching and learning mathematics. This is very much linked to the *landscape* theme introduced above but my direct concern in this section is how the metaphor of *learning landscapes* can be utilised to explore aspects of this transfer process. This would of course include the Key Stage 3 age range (11-14) but also compares and contrasts it with the primary school's position on the *landscape*. When I talk about the primary school I need to clarify that I am not referring to the building as such, although the building and the people and practices inside it are related. Rather the primary school is a social space of people (teachers, other staff,

pupils, parents) who have various practices, pedagogies, philosophies and so on. This meaning becomes clearer when related to a Bourdieuan perspective where all of those people are socially related to one another in different ways according to the field in which they are located.

The literature review in Chapter 2 provides some context for the UK government's *landscaping* agenda. What I made clear there is that in the research on school transfer there is a lack of attention to subject areas and there is a tendency to limit the research to the school itself. Moreover, there has not been a satisfactory explanation of why it is that children from lower class backgrounds feature disproportionately in the statistics representing those struggling with transfer, but more of that later. Perhaps most importantly the *mathematics learning landscape* metaphor focuses on the various cultures and subcultures of our society which affect the educational endeavour of schools. This consideration of socio-cultural factors is central to understanding the *climatic* dimension of the metaphor.

4.2.2 School, home and peer cultures

There is little doubt that "the learning context offered by the secondary school may be a major culture shock" (Nicholls and Gardner, 1999, p. 16). It is with this in mind that I want to consider the various cultures that impinge upon the learner, but I want to go much broader than the school itself. Rather than focusing on the organisational structures, my approach centres on the learner's various socio-cultural relationships. I will begin by defining, albeit loosely, the set of affecting cultures that might shape the individual's dispositions to life and learning. Such a profile is unique for any learner

within any subject but it is the peculiarities of the mathematics profile that I am primarily interested in here. Clearly each learner is influenced by these cultures in different ways and my aim is to explore how the learner's interaction with, and relationship to, these various cultures can explain different responses to the challenges of school transfer. I have already mentioned Measor and Woods (1984) proposal of a two-layered consideration of school cultures:

> There is, firstly the transfer within the formal culture, which is geared to teacher expectations and expressed through official policy; secondly, a transfer within informal culture, which is geared to pupil expectation and expressed in relationships amongst ones peers and among the pupils generally; thirdly puberty... It is in the interaction of these elements that this particular status passage has to be understood. One major aspect of this is how pupils prioritise the different passages. (p. 161)

However, this formal/informal dichotomy is still largely limited to the school site itself and so is not sufficiently broad for my purpose here. I want to consider how a much wider range of social-cultural factors relate to the transfer process. I consider the culture-space in figure 1:

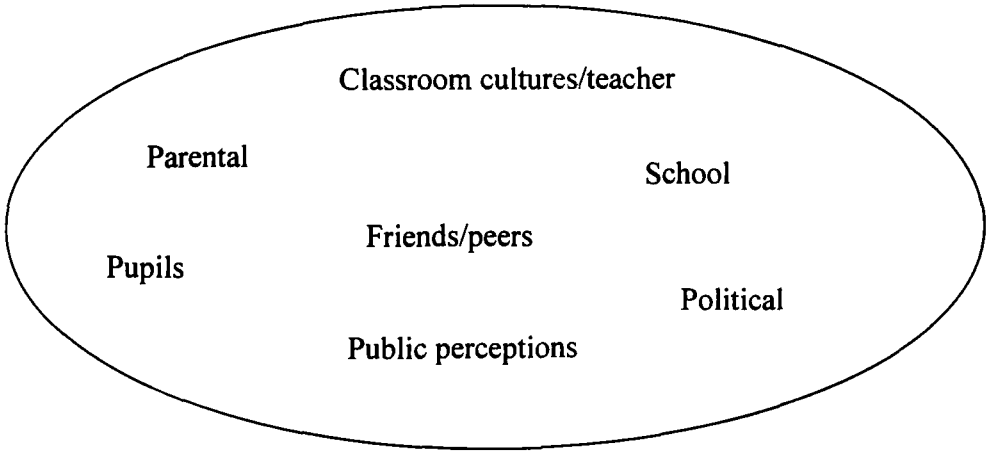


Figure 1: Socio-cultural influences upon teaching and learning

It would be convenient to be able to categorise these and arrange them relationally but unfortunately the complexity of social interaction does not allow for that. In fact, in drawing any kind of list or diagram, I am moving towards a compartmentalising or reductive structuring of the social world which is rather unnatural and simplistic. This diagram is intended to demonstrate that these areas somehow comprise the whole space rather than being ordered in terms of priority or relative position.

Some of Measor and Woods' cultures can be seen here, but there are further layers in this categorisation that have a key role to play in shaping children's approach to the learning of mathematics, e.g. public and parental perceptions of mathematics and schooling. I have also already noted that friendships may play a significant role in responses to transfer. My question then is whether the impact that each of these cultures exerts on the child, and the mechanisms by which these cultures exert their influence, can be ascertained. Before considering how a profile of influence might be constructed, I will consider some areas of the culture-space further. However, I do this with certain reservation as they are not clearly distinguishable, particularly as several of these cultures might be embodied in the dispositions of any one individual (Harker, 1984, p. 118).

Political agendas, part of what Bourdieu calls 'the field of power', are in an increasingly unstable state of flux but have a very clear role in shaping children's experiences of school and the types of mathematical experiences that children have in the classroom. These agendas are not simply those of the current government, as referenced above, where 11-14 year-old pupils' mathematics lessons are increasingly to be influenced by

the chosen priorities of the National Numeracy Strategy, Key Stage 2 assessment, Bridging Units and the Framework for Teaching Mathematics. Many of these reforms, framed by the neo-liberal, individualistic, market driven aims of recent years, are merely government guidance, but have been received as statutory in many places. The research base for these 'developments' is seriously lacking and has been criticised by Brown et al. (1998). These initiatives are simply a reflection of what Apple (1993; 2000) has termed the "conservative restoration" that has driven many governments to respond to international comparisons with a raft of reforms including national curricula and standardised national testing.

School and teacher cultures shape directly the environments in which children are supposed to study. I have grouped two overlapping areas together here, whereas they may require different treatments as Stoll and Fink (1996) have pointed out:

> Various cultures within one school may differentiate themselves: those of the teachers, pupils, administrators, non-teaching staff and parents. Such subcultures may form around interests pertinent to the particular group and create the potential to pull the school in different directions. (p. 87)

Even within one school the situation is a complex one. Nickson (2000) explains that "there are as many cultures of the mathematics classroom as there are classrooms" (p. 148). The typical primary school pupil spends the majority of their time with one teacher in one classroom, although admittedly this is changing as the pedagogies of secondary schooling increasingly find their way into the primary classroom (Galton et al., 2002, p. 131). Consequently the primary teacher's perspective on the teaching and learning of mathematics is a critical influence in shaping children's attitudes to the subject. Classrooms may share very similar cultures in terms of the general learning

environment but a teacher who is mathematically nervous could have a very different effect from an enthusiast. Either teacher might, through the employment of appropriate teaching strategies, enable students to be successful in assessments, but the accompanying perceptions of mathematics may influence students' future development either way. The situation in year seven is critically different, where the child must manage frequent 'culture shifts' from one lesson to the next. Of course the literature relating to school/classroom culture is vast and will not be explored here. I am merely demonstrating that this is one of the many layers that are affecting children's learning. It is not by chance that mathematics is the thing that children least look forward to when moving schools (Galton, Comber et al., 2002). This situation is of fundamental importance, and needs to be understood better, as it shows how the foundations for the increasingly worrying trend of low take up of mathematics at AS/A2 level and subsequently at undergraduate level in the UK have been laid at an early age. I am not suggesting here that it is the teaching of primary educators alone which has shaped children's attitudes to mathematics, as there are other cultures which have also helped to construct these learning dispositions from an early age. The most obvious of these, and arguably the most significant influencers of the child's development are parents.

The quantity, quality and type of parental support is a factor that must be considered in order to compile as full a culture-influence profile as possible. The role of the family in passing on class-specific culture is a very important consideration here:

> The attitudes of the members of the various social classes, both parents and children, and in particular their attitudes towards school, the culture of the school and the type of future the various types of studies lead to, are largely an expression of the system of explicit or implied values which they have as a result of belonging to a given social class...the same objective

> conditions as those which determine parental attitudes and dominate the major choices in the school career of the child also govern the children's attitude to the same choices and, consequently their whole attitude towards school. (Bourdieu, 1974, p. 33)

The analysis of my data will demonstrate a clear link between parental perspectives on the learning of mathematics and the child's approach to the subject. However, there is not a great deal of research focusing on the role of parents in either the learning of mathematics (e.g. Baker, Street, and Tomlin, 2001) or the transfer to secondary school (e.g. Bastiani, 1986), despite the recognition of "the overwhelming importance of home factors" for primary mathematics (Brown et al., 1998, p. 377). Notwithstanding this paucity of research, any secondary school teacher of mathematics will be all too aware of the influence of negative, or simply different, perceptions of the subject amongst parents. Such a failure to account for the role of the parent is widespread. For example, Macnab's (2000) plea for us to rediscover a sense of vision for mathematics education in the UK fails to account for the role of parents in such a process.

Public perceptions are also influential and might be mediated through parents, teachers or any number of other routes. Comments made to children by non-mathematics specialists are a case in point. Consider, for example, the use of mathematics to epitomise a bad day/teacher/lesson by Wragg's (2002). This was presumably not intended as a denouncement of the subject. However, this widely read satirical column, written by one of the most well-known education academics in the UK, contains a clear message, even if only received subconsciously..."professor of education implies it's ok to feel negative about learning mathematics!" There is a level of cultural acceptability

associated with disliking, or being unable to succeed at, mathematics. This is bound to influence the effectiveness of children's learning but it is difficult to ascertain to what extent this is the case particularly as these deeply embedded cultural attitudes to learning mathematics are so taken for granted that they often go unnoticed.

Peer attitudes are also considerably important. The report by Galton, Gray and Rudduck (1999) recommends further research in four areas, this being one of them:

> A third study would look in some depth at the impact (both positive and negative) of friendships on commitment to learning; it would identify strategies that teachers could use to discourage the growth of groups with an 'it's not cool to learn' attitude. (p. 29)

They acknowledge that shifting social relationships have a significant role to play in determining the rate of pupil progress post-transfer. One example of this is demonstrated in a recent study that has highlighted the diverging gender roles adopted by children following the move (Jackson and Warin, 2000). Elsewhere Stoll and Fink highlight the peer sub-cultures that develop with adolescence:

> Adolescents, in particular, can form their own subcultures, related to key facets of their current state of development. These can include physical, emotional, social and intellectual changes; the need to belong to a peer group; conflicts, inconsistencies and alienation as they face new possible identities and values; a need for independence; a concern with the need to cope with the complexities of the wider world surrounding them; gender, ethnic and social class influences; and reactions of adults to them. (1996, p. 89)

How do these various layers of influence interact and how is this related to the notion of a *learning landscape*? Which factors have the greatest/least effect and how does this vary between schools, classes and individuals? It is the similarities and differences that

these influence-profiles have in primary and secondary schools that provide a key to understanding the continuities and discontinuities of school transfer. It is clear that three areas of the culture-space, namely: children's attitudes, parental support and peer influence, will mean very different things for different children. However, for any one pupil, it is reasonable to assume that at least in the first two of these areas their personal influence-profile may look very similar in years six and seven. What is important to note here is that what children do in classrooms, and how they learn, is a function not only of what goes on inside that classroom and school but also what happens at home, and amongst friends, both in and out of school. Moreover, if one wants to understand these influences properly synchronic accounts are insufficient. Stables (2002) argues convincingly for an increase in more complex diachronic studies in education as these enable the researcher to understand how long-term exposure to these evolving cultures has shaped their current dispositions to learning.

4.2.3 Metaphor

Having established that there exist complex relationships between the learner and the multi-layered cultures I will now develop this metaphoric notion of *learning landscape*. Ashton (1994) explains that,

> An essential feature of metaphor is that it demands the interpreter becomes actively involved in searching for meaning. This is done by seeking for elements that the two parts of the metaphor have in common in order to share insights. Nevertheless the process of interpretation is far from simple because each individual brings unique experiences and knowledge to the task of interpretation, and if the experiences and knowledge possessed are unrelated to the context within which the metaphor has been conceived, communication is likely to break down entirely. (p. 358)

So I have adopted this "interaction view of metaphor", which "sees it as allowing two separate systems of ideas to interpenetrate or illuminate each other" (Ashton, 1997, p. 196). It is an interpretive tool. I have to disagree with Elliot's (1984, p. 39) assertion that metaphors' "incompleteness makes them flexible instruments for communication, but they lack depth". On the contrary, the *landscape* metaphor has great depth, as well as complexities and components that render it somewhat problematic. He goes on to say:

> A metaphor on its own is no more able to re-structure the cultural background than an eagle over an abyss is able to restructure the mountain background. Metaphor is nevertheless of great importance for human beings who, being embodied, have senses, imagination and feeling as conditions of action, and depend upon vitality for the accomplishment of the work of their spirit. (Elliot, 1984, p. 53)

'My' metaphor does not seek to "re-structure the cultural background" but simply aims to illuminate the complexities of learning processes. It deals with a familiar context, allowing personal understandings of landscapes or ecosystems to be used to explore learning landscape situations. The challenge afforded by the different knowledge that people bring to a consideration of this metaphor is an opportunity but is also problematic. This was highlighted to me in a conversation with a geographer colleague who wanted to interpret the components of the metaphor much more literally than I had intended.

Elliot's argument reflects an understanding of metaphor that fails to acknowledge the all-pervasiveness of metaphor in everyday language and in meaning making. Lakoff and Johnson's (1980) early work in this field has demonstrated how language employs metaphorical constructs to build meaning on the basis of prior understandings (also see:

Lakoff, 1993; Reddy, 1993; Schön, 1993). Through a series of detailed studies of key metaphors they demonstrated how all meaning making sits upon a foundation of metaphor. For example, in this paragraph there is the clear use of "knowledge is a building" metaphor: 'construct meaning', 'sits upon', 'foundation of...' Even the use of 'key' suggests that one can access the building of knowledge.

Their analysis deals with such taken-for-granted everyday use of language and this could be applied to education very usefully, for example using the metaphor "the education system is a market". This metaphor incorporates league tables, targets, performance, competition, etc. Lakoff and Johnson then argue that we understand education using our understanding of market forces. In other words we make meaning concerning the purpose and value (there's another one) based upon our understanding of markets. It is easy to see why the choice of publicly used metaphors can have a considerable (and possibly) detrimental effect on the nature of schooling itself.

We could consider the learning of mathematics using the metaphor "learning mathematics is a journey" and could see how this might help and hinder the learning of mathematics. For example, "revisiting" topics in subsequent years is not helpful if one considers the learning of mathematics to be a journey, as that implies progress has not been made. Similarly "moving on" to a new idea suggests that the concepts are fixed in place and cannot move. It would then be difficult to link ideas together and could be construed as counterproductive if one had to "go back" to previous ideas.

This metaphor of landscape is a more complex one than many of those explored by Lakoff and Johnson. It subsumes a number of other metaphors concerning aspects of position, place, climate, movement, orientation and so on. What it does have in common with those metaphors considered by Lakoff and Johnson, is how new meaning is constructed through the use of prior meanings and understandings of other contexts. However, those meanings are not the same for all people. Contrary to Elliot's assertion that metaphor lacks the power to "re-structure", metaphor is understood here to be a primary means of constructing and reconstructing understanding.

Before examining the landscape metaphor more closely I will mention the other main use of a landscape metaphor in education theory, which occurs in the work of Clandinin and Connelly (1995) and other associated researchers. They explain that:

> A landscape metaphor is particularly well suited to our purpose. It allows us to talk about space, place, and time. Furthermore it has an expansiveness and the possibility of being filled with diverse people, things and events in different relationships. (1995, p. 4)

In examining teachers' professional knowledge landscapes Clandinin and Connelly include the wider personal/social context that the teacher is a part of, and how that might impact their work as a teacher, but they see the teacher as having a number of different landscapes that they are on or off. Craig (1995), on the other hand does not even include any of the wider personal/social contexts in her work on professional knowledge landscapes. I conclude that their landscape metaphor is somewhat different from my usage here, despite the fact that the above does suggest considerable common ground.

4.2.3 Learning landscapes

The four constituent elements that I will use to define the *mathematics learning landscape* are *geology, climate, human influence* and *time*. I am not using these terms with geographical technical accuracy in mind, as my intention here is to develop metaphor rather than earth science. Clandinin and Connelly's 'shape, space and time' does not adequately cover the middle two elements of my metaphoric schema, which is unfortunate as they are arguably the most interesting. In relating these four elements to the following exploration of Bourdieu's work I suggest that they are linked to objective structures, subjective structures (habitus), power relations (field), and of course time. By looking at each of these four elements in turn I shall now consider how the notion of a *learning landscape* could be developed: what commonalties exist between the educational culture-space and the components of the *landscape*. The task of mapping the culture-space above into the four *landscape* characteristics is not straightforward, as there is not a one-to-one correspondence. However, the process of defining the *landscape* metaphor should create an image that will support the exploration of distinctions and similarities between the two mathematics-learning locations, i.e. primary and secondary schools.

Firstly, natural landscapes have a relatively fixed underlying and constraining geological structure. Within education there also exists *geology*. Although I want to draw some parallels in support of the metaphor, it is clear that due to the comparatively short time scale in which educational *geology* has developed, the evolutionary process of change is faster in education than in the natural landscape. This educational *geology* is all that which is in 'physical' existence and includes, for example, the age of compulsory

schooling, which in the UK is from 5-16 years of age. This is subdivided into the four, clearly defined Key Stages of compulsory schooling; often the first two (5-11 years) located in a single primary school and the second two (11-16 years) in a considerably larger secondary school. Each school has its own architecture and site, and so on. Included here are *geological* features that are physical, e.g. buildings, but also features that are structural forms, such as the National Curriculum, General Certificate of Secondary Education (GCSE) examinations, Key Stages, teacher pay and conditions, etc. These features are the current realisation of education history in the UK; they are the objective and objectified structures of the education field both past (e.g. buildings) and present (e.g. policy). As such we might expect them to evolve, particularly with the development and implementation of new government policy but for any one child in a particular school this *geology* is largely fixed, at least for large sections of their compulsory schooling. We have had the introduction of significant policy initiatives in mathematics education in the UK, i.e. the NNS and FTM, but these *geological* forms sit with bigger, taken for granted features. So even if these initiatives stand the test of time and become more well established *geological* features, they might not produce the hoped for improvement in the transfer process. Some of these features are old, taken for granted, and remain largely unquestioned. Very few researchers have raised this as an issue related to school transfer:

> To tackle the remaining transfer problems...it may therefore be more important to explore whether the structural limitations inherent in our school system are preventing further progress rather than merely seeking to place all the blame on teachers for the present hiatus. (Galton and Hargreaves, 2002, p. 189)

I wholeheartedly agree with this but suspect that changing the "structural limitations", even if we knew what would work more effectively, would prove too difficult in the current political climate.

The second aspect of the metaphor concerns *climate*, both macro and micro. Natural climates generally remain relatively constant despite often having a cyclical nature. However, whereas human impact on a local, natural environment can be rapid and significant, climate change cannot be forced to move at the same pace as one cannot effectively isolate micro-climates from macro-climates. In addition they can respond chaotically to relatively small stimuli.

It is in this *climatic* aspect that I find much of the usefulness of the metaphor. The learning *climate* that exists within a particular friendship group, in the whole class and, within the family and crucially, in the broader society, may have an impact on the quality of mathematical learning. The *climate* is different from the *geology* of the educational system in the respect that *climate* exists, subjectively, in the attitudes and dispositions of different groups, whereas the *geology* is the result of the actions of educators and policymakers of the past, both recent and distant. That *geological* structuring, shaped by the different socio-political cultures of earlier times, now sits in tension with the current climate. It is also worth pointing out that societal attitudes and dispositions to learning (mathematics) have been shaped by people's experiences of earlier educational *geologies*. The metaphor enables us to see how forms of social reproduction might be effected over time, although as the rate of *geological* change

increases so the reproductive effect becomes more complex or 'fuzzy' (Bourdieu and Wacquant, 1992b, p. 23).

This *climate* functions at certain levels: public perceptions form a diffuse but pervasive macro-climate, itself highly complex, taken for granted and gradually evolving, within which each school has a developed meso-climate. The impact of the macro-climate might easily be overlooked but requires careful consideration. Taking this further to the individual classroom we have a number of microclimates. As Anderson explained, more than twenty years ago, "understanding the influence of climate will improve the understanding and prediction of student behaviour" (Anderson, 1982, p. 371). Her extensive report on the school climate research up to that time forms part of a much larger body of research into school climate. Unfortunately, much of it falls into the error of isolating the school from its socio-cultural context:

> In most climate research, the school provides the boundary for the system. The wider environment in which the school is located is not considered independently of the school. Variables from that wider environment are located on the dimension of milieu and are included in the concept of climate through membership of groups within the school. (Finlayson, 1987, p. 169)

Finlayson goes on to say that there is a "necessity to complement this (climate) metaphor with others that incorporate personal, structural, political, and symbolic dimensions" (p.171). This is precisely what this thesis is seeking to do.

It may be relatively easy for the teacher apparently to alter classroom microclimates but the bigger the culture layers become (e.g. school cultures or local attitudes to education) the more difficult it is to affect *climate* change. In a similar vein, Stoll and Fink (1996)

acknowledge the difficulty of trying to change systems, or *geology*, without associated changes in culture, i.e. *climate* in this metaphor:

> The difficulty arises that in changing structures without changes in the school culture, change is likely to be superficial, which is a danger with all externally generated educational reforms. (p. 84)

Moreover, the *learning landscape* metaphor takes this warning to a national level, i.e. changes in the national educational *geology* might only have superficial effect if the *climate* remains unchanged. But *climate* is much more difficult to change that *geology*, and might only be altered gradually by changes directed at the educational system itself, e.g. policy, or by socio-cultural transformation in the broader society in which the education system is embedded. This limiting effect of *climate* may be one of the issues that requires further exploration in the international comparisons of mathematical competencies. National learning-*climates* affect the nature of the *learning landscape* within that country or region. Consequently, it is of critical importance to understand potentially limiting factors, e.g. the public's perception of mathematics and society's attitude towards the different phases of compulsory schooling. Only then will we be in a position to more fully appreciate the challenges of teaching and learning mathematics on either side of transfer. Whereas Brown et al. (1998) effectively demonstrate the unsound, technically flawed, basis of international comparisons, they do not explore in any depth the socio-cultural reasons why such comparisons are nonsensical. In contrast, Andrews and Hatch's (2000) comparison of mathematics teachers in England and Hungary demonstrates that there exists significantly different notions of what mathematics is and how it should be taught in different cultures. This kind of cultural difference is at the heart of this *climatic* aspect of the metaphor.

Human impact on the natural environment can be rapid and significant: consider, farming, deforestation, urbanisation, erosion, pollution, etc. Sometimes such actions are proposed to benefit society whereas at other times the ill thought out actions of individuals, groups or governments have a detrimental, and sometimes irreversible effect on the landscape.

It is in this area, *human impact*, that much change occurs in education and consequently the educational *landscape* has been altered in recent decades, primarily through *geological* adaptation. *Human impact* does include the minor effects of the majority of actors that affect the *learning landscape*, but more importantly it describes the power relations whereby specific individuals or groups are legitimised in their implementation of new initiatives and policies, usually with the intention of affecting meaningful change. This *human impact* acts to restructure the *landscape* via the back door, that is through the transformation of the *geology*. An implication is that despite the implementation of many policies aimed at improving the quality of education, the effect on the *learning landscape* has been of significantly smaller magnitude. How much has really changed? In terms of mathematics, significant changes heralded by the NNS and FTM are currently shaping the *mathematical learning landscape* for 5-14 year olds, but this is a *geological* initiative that is hoping to lead to a *climatic* change. The question that remains to be answered is this: to what extent will this significant human/governmental intervention positively alter the mathematics-learning *climate* in this country? Moreover, are some of the initiatives actually a step backwards? In this study the inclusion of Mathematics Bridging Units (QCA, 2000a; 2000b; Wright, 2001) in the transfer process lead to children initially being in one maths group for three weeks

and then having to go through the process of being ability-grouped, changing teachers and timetables. This is an unfortunate outcome of an initiative designed to smooth the transfer process, a reflection of the chaotic nature of this complex system. These units of work, as their name suggests, are designed to be used during the last few weeks of the primary school and continued in the first few weeks of the secondary school but as yet they have no proven pedagogic benefit. (Galton and Morrison, 2000, p. 447)

If such human actions fail to affect some of negative attitudes towards learning mathematics in the general public, then a climatic barrier will exist that restricts the future development of the *learning landscape*. Why does such a climate of attitudes exist concerning mathematics? When and how did it arise and can it be changed? What positive actions would need to be taken, and what negative actions need to be stopped, in order to achieve this? This is of urgent importance both for the success of mathematics learning in the transfer from primary to secondary school, where there is much anxiety, but also in understanding key transfer points for the take up of mathematics, i.e. GCSE to AS/A2 level and then onto undergraduate study.

The final element that completes the *landscape* metaphor is time. It is not that time itself changes the *landscape* but that the passage of time provides a framework in which change can take place. *Human impact*, in the form of government policy, can be quick. It takes longer for such change to be effectively incorporated into, and accepted as part of, the evolving educational *geology* and longer still for there to be any effective change in *climate*, particularly those layers of *climate* that reach beyond the boundaries of the educational system, e.g. societal attitudes to; learning mathematics, primary and

secondary schools, teachers, etc. However, long-term change that occurs in the educational *geology*, as a result of human intervention cannot happen independently of a change in *climate*. *Climate* creates natural boundaries within which only a range of human activities will have long-lasting effects. One cannot expect any strategy to result in vastly increased mathematical competence if a significant proportion of those individuals and institutions that could influence the learners remain proudly innumerate or math-phobic! Similarly, policies designed to improve the transfer process are limited by the two parts of the *landscape* in which they must be implemented. They may succeed for a while, or in part, but will only be transformational in the long term if the prevailing *climate* allows.

What I am trying to emphasise through the use of this metaphor is the need to take a bigger structural view of the backdrop to mathematics education and school transfer. This backdrop is essentially sociological, to some degree peculiar to the UK, and can be used to theorise the resistance to change that the system has shown. In the following examination of Bourdieuan theory the processes whereby children are positioned on the *landscape* will be explored. Through this I will show how movement on the *learning landscape* is not completely free but subject to socio-historical forces of friendships, family and education. This account may seem overly pessimistic regarding the potential for change in the education system. In this regard my more sceptical position is not dissimilar from that of Bourdieu.

4.3 PIERRE BOURDIEU'S THEORY OF PRACTICE

4.3.1 Positioning Bourdieu

The central intention of Bourdieu's sociology is the development of a generalised theory of practice. He was keen to show how various social fields, homologous in nature, were able to reproduce structural inequality without the actors explicit knowledge or intervention. Throughout his academic career he wrote prolifically on a wide variety of subjects, including education, developing concepts that critically challenged many opposing sociological viewpoints. Schwarz describes his work as "an ongoing polemic against positivism, empiricism, structuralism, existentialism, phenomenology, economism, Marxism, methodological individualism and grand theory" (1997, p. 5), although admittedly Bourdieu has incorporated many aspects of these opposing positions into his sociology.

One of his central concerns was to avoid the dichotomies that have been so prevalent in social theory. With the development of his versatile concept of habitus he argued for a dialectical relationship between structure and agency. Or, in his own words, habitus allowed him to "break away from the structuralist paradigm without falling back into the old philosophy of the subject or of consciousness" (Bourdieu, 1985, p. 13). He was also concerned to bridge the macro-micro divide and the opposing subjective and objective paradigms. In seeking to wind a path between these positions he provoked a critical response, some of which I will consider later in this chapter.

Bourdieu is renowned for his obfuscated writing style but this is very deliberate. This style has been described, sympathetically, as an attempt to "gain distance from the taken for granted world" of everyday language (Swartz, 1997, p. 13). Bourdieu considered language to be a considerable problem for his sociological endeavour and as Swartz goes on to point out, Bourdieu writes so as to position himself critically against the dominant French academic orthodoxy of his day that considered clarity of thought and expression to be equated with natural ability. Wacquant explains Bourdieu's writing style and the impact that it has had upon those seeking to make use of his ideas:

> ...the idiolect he has created in order to break with common-sense understandings embedded in common language, the nested and convoluted configuration of his sentences, designed to convey the essentially recursive character of social processes, the density of his argumentation have not facilitated his introduction into the discourse of Anglo-American social science. (Bourdieu and Wacquant, 1989, p. 31)

For Bourdieu, "style of speech and accent are minor class signs" (1974, p. 39) and common understandings of language and style are associated more with common social origins and positions than with ability or intelligence. Against such a justifiable rationale for his use of language, I consider Jenkins' complaint that Bourdieu's writing is "unnecessarily long-winded, obscure, complex and intimidatory" (2002, p. 9) to be unwarranted. Bourdieu's four points of advice to new sociologists (the first being 'have fun!') culminate in this warning about words:

> Fourthly, beware of words. Language poses a particularly acute problem for the sociologist because it carries along a "spontaneous" social philosophy which constitutes one of the most formidable "epistemological obstacles" to a rigorous science of society... (Bourdieu and Wacquant, 1989, p. 54)

Now Bourdieu may not have been seeking any kind of unifying grand theory but there is very much a sense in which his approach is concerned, through the generalisability of the particular, with the bigger picture of social life. As such his work on the conservative role of the school is particularly helpful as here he provides a theoretical perspective on the relationship between the culture of the home and that of the school (Bourdieu, 1974; 1989; Bourdieu and Saint-Martin, 1974). His theory of practice also allows for the comparison of different social arenas as there is a high degree of homogeneity in the structuring and restructuring processes. The implication for my thesis is that the findings herein have very clear parallels to other mathematics and transfer contexts. I will now consider the components of his theory of practice in more detail.

4.3.2 Habitus

Central to Bourdieu's theory are the tools of habitus and field (although field was a relatively recent addition to his framework). Bourdieu is keen to point out that these are not simply theoretical tools but are working tools for empirical application. He cautions against what he perceived as Marx' erroneous, back-to-front approach in moving from the 'logic of things' to the 'things of logic', or "existence in theory to existence in practice" (Bourdieu, 1998b, p. 9).

Habitus is a complex idea that, as Nash has suggested, "Bourdieu is reluctant to define, and anyone who attempts to discover consistency in his usage will be disappointed" (Nash, 1999, p. 176). Sociologists have variously interpreted Bourdieu's notion of habitus as:

> A set of dispositions, created and reformulated through the conjuncture of objective structures and personal history. (Harker, Mahar, and Wilkes, 1990, p. 10)

> ...history embodied in human beings. Its existence is apparent in and through social practices as manifested in ways of talking, moving getting on with people and making sense of the environment. (May, 1996, p. 126)

> A system of schemes of perception and discrimination embodied as dispositions reflecting the entire history of a group and acquired through the formative experiences of childhood. (Nash, 1999, p. 177)

> An embodiment of the complex amalgam that some would call structural factors, such as social class, gender and ethnicity, together with a person's genetic inheritance, all of which continually influence and are influenced by others through interaction. (Bloomer and Hodkinson, 2000, p. 589)

None of these definitions does full justice to a powerful concept that has evolved throughout Bourdieu's work and can be best understood when looking at the larger body of his work. Reay contributes her own understanding of the habitus as "a deep, interior, epicentre containing many matrices" (1995, p. 354). Her work with primary school children highlights the importance of understanding personal histories and recognising that "the habitus acquired in the family is at the basis of the structuring of school experiences" (p.356). The habitus is derived primarily from family socialisation experiences but can be modified through interaction with, for example, the peer group (Swartz, 1997, p. 102), albeit in a limited, evolutionary way.

I would disagree with Nash regarding his assertion of Bourdieu's reluctance to define habitus. The challenge seems to be defining it adequately on paper when it is such a potentially rich concept and when we know that Bourdieu has committed himself to a linguistic course that guards against straightforward descriptions that might be misconstrued. For Bourdieu, habitus is "that system of dispositions which acts as a mediation between structures and practice" (1973, p. 72), it is the "durably installed, generative principle of regulated improvisations" (1977, p. 78), the "practice-unifying and practice-generating principle" (1984, p. 101). Later in *Distinction* he expands this last description of the habitus:

> The habitus is necessity internalised and converted into a disposition that generates meaningful practices and meaning-giving perceptions; it is a general, transposable disposition which carries out a systematic, universal application - beyond the limits of what it has actually learnt - of the necessity inherent in the learning conditions
>
> The habitus is not only a structuring structure, which organises practices and the perceptions of practices, but also a structured structure: the principle of division into logical classes which organises the perception of the social world is itself the product of internalization of the division into social classes. (1984, p. 170)

In this last part we see the iterative, 'chicken and egg' cycle in which habitus is perpetually involved: "objective structures tend to produce structured subjective dispositions that produce structured actions which in turn, tend to reproduce objective structure" (Bourdieu and Passeron, 1977, p. 203). Thus habitus is a subjective embodiment of objective social structure but at the same time social structures are interpreted, recreated and modified by the strategies of the habitus. This process is continual and so it is here that the objective and subjective are held together, in the habitus of actors.

In the many descriptions of habitus that Bourdieu has made, there appears to be little contradiction, but together the descriptions help to define the concept, and are arguably more helpful than the secondary source descriptions. That habitus is an embodiment of culture and personal history is clear. That the habitus enables the actor to generate practice and interpret practice is also clear. Such practices are 'regulated improvisations' but this is not a deterministic regulation. There is a sense in which the actor is free to choose how to act but not free to choose the principle by which they choose how to act. Here I am using the word choice, not in the same way as might be used by rational action (or choice) theorists, but choices of the habitus are usually implicit and hidden in the strategies, actions and interpretations of actors. Bourdieu's concept of habitus has become increasingly broad and inclusive and is summarized well in Schwarz' account as:

> ...a set of deeply internalised master dispositions that generate action. They point to a theory of action that is practical rather than discursive, pre-reflective rather than conscious, embodied as well as cognitive, durable though adaptive, reproductive though generative and inventive, and the product of particular social conditions though transposable to others. (Swartz, 1997, p. 101)

Important for this thesis is the relative stability of the habitus, it is 'durable but not eternal'. In other words, although the early formation of the habitus might have been largely within the family, and this clearly has implications for researching classroom dispositions, there is some room for it to evolve over time. However, the potential for this is probably not as great as many would like to think:

> habitus is fairly resistant to change, since primary socialisation in Bourdieu's view is more formative of internal dispositions than subsequent socialisation experiences. There is an

> ongoing adaptation process as habitus encounters new situations, but this process tends to be slow, unconscious, and tends to elaborate rather than alter fundamentally the primary dispositions. (Swartz, 1997, p. 107)

For Bourdieu, the habitus of a biological individual is merely a deviation from those with the similar internalised life chances. For this thesis, where I am working with individual children I need to acknowledge this and allow the analysis of individual situations to reflect something of their relative classified social position.

4.3.3 Field

Bourdieu's sociology is dynamic. Habitus cannot exist by itself as the process of 'practice-unifying' is precisely about relating the strategies of the habitus to those of other actors. It functions to co-locate actors with similar habitus' dispositions in the social space, which for Bourdieu forms the basis for any classificatory system of society.

Class is not considered to consist in material possessions, and so Bourdieu moves on from Marx' more economistic view of class whilst not fully adopting a Weberian 'lifestyle' perspective. As a rebuttal to some of his critics and those who wanted to inappropriately categorise his work on class he replies:

> Social classes do not exist...What exists is a social space, a space of differences, in which classes exist in some sense in a state of virtuality, not as something given but as *something to be done*. (Bourdieu, 1998b, p. 12)

Society positions individuals into a complex relational social space where practice-generation is both an indicator of position and a means of positioning, through the

'harmonising of dispositions' that I have already referred to (Bourdieu, 1984, p. 110). What is crucial in this Bourdieuan sociology is the relational dimension of social life. However, these relationships are not equal but there exists struggle in the social space which positions individuals relatively. This notion of distinction or difference is central to anything that we might call class-analysis in Bourdieu's work. Wilkes, writing on class in Bourdieu's work, concludes that

> ..in its artistic components, in eating habits, in the dispositions of the body, in theatre-visiting (or not theatre visiting), in a concern for music or no concern, in the political attitudes, the cars they drive, the men and women they marry, the sort of living rooms they construct - in all these ways the lives of classes are drawn. (Wilkes, 1990, p. 130)

These, and other, classificatory dispositions can be seen in the case reports of Chapter 6-8 and have been used as a means of locating children and their families in the social space.

Bourdieu uses the same notions of power relations to construct fields: social sub-spaces that have the same hierarchical properties and patterns of reproduction. If there is no field there can be no habitus and vice versa. As with habitus, the term field has been misused and misunderstood and sometimes just missed out. Grenfell and James explain that:

> Field is...a structured system of social relations at a micro and macro level. In other words, individuals, institutions and groupings, both large and small, all exist in structural relation to each other in some way. These relations determine and reproduce social activity in its multifarious forms. Moreover, because they are structural, positions...can be mapped or located, and the generating principles behind their relations ascertained. (Grenfell and James, 1998, p. 16)

This definition is clear and the concept highly relevant to this thesis, with the language of mapping and location reflecting the spatial, geographical nature of the *landscape* metaphor. Bourdieu's own definition is as follows:

> I define a field as a network, or a configuration, of objective relations between positions objectively defined...the limits of the field are situated at the point where the effects of the field cease. The principles of the dynamics of a field lie in the form of its structures and, in particular, in the distance, the gaps, between the various specific forces that confront one another. (Bourdieu and Wacquant, 1989, p. 39)

From this the field of education, for example, would be limited to the point 'where the effects of the field cease', but where this is in education is a moot point. For the purpose of this thesis I am not just considering the field of education (which itself is closely allied to political "field of power") but also the family and peer culture fields. The overlaying of these three fields is the detail in the *learning landscape* metaphor. This will enable me to analyse my particular learning context through the habitus of the children, as "the field structures the habitus...habitus contributes to constituting the field" (Bourdieu and Wacquant, 1989, p. 44). In the same interview Bourdieu described how "the relational and analogical mode of reasoning fostered by the concept of field enables us to grasp particularity within generality and generality within particularity" (p. 36). This aspect of the theoretical tool will be particularly helpful in the later analyses.

So how might this mapping process work in this context? Grenfell and James (1998) have developed a means of utilising a Bourdieuan framework for educational research. Fig. 2 is an adaptation of their work and demonstrates the interplay between my three proposed fields: school, family and peer culture. This selection of fields is an attempt to

group together loosely the cultural layers discussed earlier into three distinct, interacting areas that comprise the dominant influences on the child.

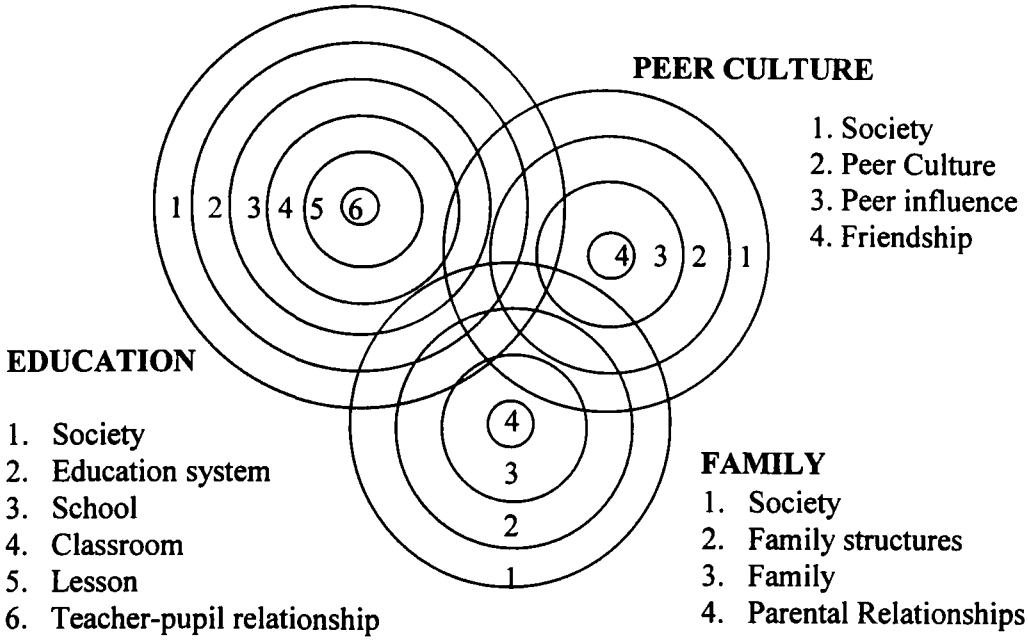


Figure 2: Fields for analysis of school transfer (adapted from Grenfell and James, 1998)

This two-dimensional representation fails to do full justice to the complexities of the social context of learning mathematics but it does begin to show how these fields might interrelate. The aim of my research is to ascertain the position of children in relation to these three fields and consider how this relates to their moving schools. How much movement is there on this field *landscape*? The difficulty with the diagrammatic representation of the fields above is that they suggest a physical spatiality rather than a social one. Moreover, it is flat and it seems that this oversimplifies the complexities of

the situation. The diagram might not be that useful but it does highlight the complexity of the object of my research

4.3.4 Capital: economic, cultural and social

Another way of understanding class and field in Bourdieuan thought is through his economic metaphor of capital. Social position (and thereby class) is defined by the overall volume of, and composition of, capital. However, capital is not merely economic but cultural and social. It is the unique combination of capital that defines positions in the social space and Bourdieu (1984) has presented a diagrammatic representation of society on a Cartesian plane with axes of economic and cultural capital.

Cultural capital is the form that Bourdieu makes most effective use of in his analyses of French social life. It can exist in multiple forms (Bourdieu, 1986) which could be embodied (e.g. body shape, deportment, social airs), objectivised (e.g. books, art, music) or institutionalised. It is important to realise that the recognition and transmission of cultural capital forms the heart of Bourdieu's sociology of educational reproduction:

> cultural capital, whose diffuse, continuous transmission within the family escapes observation and control (so that the educational system seems to award its honours solely to natural qualities) and which is increasingly tending to attain full efficacy, at least on the labour market, only when validated by the educational system, i.e., converted into a capital of qualifications, is subject to a more disguised but more risky transmission than economic capital...the more the official transmission of capital is prevented or hindered, the more the effects of the clandestine circulation of cultural capital become determinant in the reproduction of the social structure. As an instrument of reproduction capable of disguising

> its own function, the scope of the educational system tends to increase, and together with this increase is the unification of the market in social qualifications, which gives rights to occupy rare positions. (Bourdieu, 1986, p. 254)

Bourdieu here grants the transmission of cultural capital a critical role in maintaining distinction, or differences in society. The socially differentiated distribution of cultural and economic capital also has a bearing of the chances of successfully negotiating transfer. Government policy aimed at broadening choice for parents at this transition point was intended to be more equitable. However, those with more cultural capital at stake were forced into a risky game of school choice, a process which has received much recent attention (Ball, 1997; 2003; Ball et al., 1996; Power, Edwards, Whitty, and Wigfall, 2003). Through the investment of economic capital in terms of residential location some middle class parents can ensure a good return of cultural capital by ensuring access for their children to the best schools, or rather those schools where there are other children from backgrounds with similarly high levels of cultural and economic capital. This is as much about accumulating social capital as it is cultural capital. School choice is not a key factor for most of the children moving from the primary school in which this research was conducted. The secondary school has a reasonable reputation and parents of children in the feeder primary schools, at least of those children in the case study group, are happy for their children to move to that school. Any other options for secondary school are either oversubscribed, some distance away or nearer to the city centre. One of the children in the study did make a move to a private school and I will explore the rationale for that move later, in Chapter 6.

One could use a similar line of argument when looking at the recent expansion of higher education in the UK. Through increased course options and a government drive to improve access, the 'playing field' is apparently levelled but in reality this is not so, as institutional hierarchies are being re-established through specialisation with the impending and concomitant top-up fees (DfES, 2003b). A Bourdieuan analysis predicts that we will see the stratification of society maintained through the privileged access of those endowed with greater cultural (and economic) capital into those more prestigious institutions.

This may seem to be getting off the point somewhat, but I add those asides with the aim of highlighting how the 'clandestine' privileging of the culturally rich can be seen at all points in the education system. It seems reasonable to assume that the same processes are functioning at the micro level at school transfer: "scholastic success is a function of the cultural capital inherited from the family" (Bourdieu and Saint-Martin, 1974, p. 357), and success at transfer appears to be no exception. Moreover, in the same article Bourdieu and Saint-Martin suggests that mathematics is a talent subject and as such offers one of the best investments for cultural capital.

The third form of capital that I will mention briefly here is social capital. The concept of social capital has been used more widely perhaps than cultural capital and concerns that ability to mobilise relationships and so relates to membership of groups. However, it goes further than this as an individual's level of social capital is related to the amount and types of capital possessed by those people with whom he/she is in relationship. So,

although it doesn't feature in Bourdieu's diagrammatical representation of society, it does enable explanations of trajectory that might otherwise not be possible.

4.3.5 Reproduction

The central concept of habitus is interwoven with notions of reproduction in Bourdieuan thought. As I have already noted the habitus is normally fairly resistant to change, at least to changing quickly, and it also acts so as to locate the actor socially near to others with similar distributions of capital and dispositions of habitus. So habitus has an intergenerational stability and although this does not imply any form of simplistic fatalism or determinism it does suggest that there is an undercurrent of social reproduction (not replication) which runs through society and through schools. This is exactly why a bigger picture perspective is important and precisely why this kind of analysis is needed. The school effectiveness movement, for example, is criticised for adopting the converse, "stubbornly decontextualised", position (Whitty, 2001, p. 209).

Bourdieu has devoted a considerable amount of time to applying these notions of reproduction to the field of education and I want to explore these ideas further here as they are central to my thesis. What is interesting in Bourdieu's work, and in my empirical work reported later, is the invisibility of many of these processes. Moreover, I will show how teachers misrecognise aspects of children's habitus, making judgements about children's mathematical ability that are actually judgements based upon other clues relating to the children's social position. For some sociologists of education with a professed emancipatory agenda of social equality, the suggestion of such deep rooted and insidious reproductive processes might be received with scepticism. However, I

conclude herein that those currents are running strongly under the surface rhetoric of social justice, equality of opportunity and inclusion; concealed "by an apparently neutral attitude" (Bourdieu, 1973, p. 72).

At the heart of Bourdieu's argument is the recognition that the education system is legislated, administered and staffed predominantly by the middle classes (Harker, 1984), who unknowingly function to pass on the dominant culture (see also Halsey et al., 1980; Willis, 1983). Only children endowed with similar amounts of cultural capital are able to make the most of the educative process of schooling:

> ...the educational system reproduces all the more perfectly the structure of the distribution of cultural capital among the classes...in that culture which it transmits is closer to the dominant culture and that mode of inculcation to which it has recourse is less removed from the mode of inculcation practised by the family. (Bourdieu, 1973, p. 80)

There is a need to clarify what Bourdieu means by 'system' here because it is not the case that he is in any way blaming teachers but "it". Even though teachers have a key part to play in this reproductive process they are only partners with politicians, parents, pupils and their peers, i.e. the broader socio-scape. All of these groups comprise the system and all contribute, possibly unbeknownst to them, to this cycle of class biasing. Bourdieu describes the inheritance and modification of parental perspectives and he also comments on the effect of the peer group:

> It can be seen that the influence of peer groups ... is very much a function of the social class of the children - reinforces, among the least privileged children, the influence of the family milieu and the general social environment. (Bourdieu, 1974, p. 35)

It must be remembered here that Bourdieu uses statistical likelihood to describe how it is that some children will manage to 'buck the trend' and develop a social or educational

trajectory that will enable them to increase their capital. What is clearly implied from this citation is that if we know that re-socialising into the new peer group is a challenge at transfer then it might be a greater challenge for some groups of children, particularly those endowed with less social capital. Returning to the notion of equal opportunity Bourdieu is scathing and insightful:

> ...in fact, to penalise the underprivileged and favour the most privileged, the school has only to neglect, in its teaching methods and techniques and its criteria when making academic judgements, to take into account the cultural inequalities between the different social classes. In other words, by treating all pupils, however unequal they may be in reality, as equal in rights and duties, the educational system is led to give its *de facto* sanction to initial cultural inequalities. The formal equality which governs pedagogical practice is in fact a cloak for a justification of indifference to the real inequalities with regard to the body of knowledge taught or rather demanded. (Bourdieu, 1974, p. 37)

This analysis turns notions of pedagogic equality of opportunity on their heads and leads to the questioning of whether the changes in pedagogy through a child's school career tend to exacerbate this situation over time. However, that is not the aim of this study here but I will show in Chapter 9 how Bourdieu's conceptual framework highlights problematic aspects of mathematics assessment and thereby related question styles that can be found in most mathematics texts.

I will provide empirical evidence of how these processes play out in the lives of a few children moving schools. The improvisations of the habitus are functioning to relocate the children in the new social space. These improvisations are, as I have shown, strategies that are rooted in early socialisation but are now undergoing modification by necessity of adjustment to the new peer group and school system. In addition to this the

teachers engage the children with their own set of 'normal', taken for granted, interpersonal and pedagogical practices that combine to quickly restructure the field and position children, and this strongly correlated to unknown (at least consciously) social positions of children.

4.3.6 Bourdieu's critics

Many sociologists of education have utilised Bourdieu's tools in their work (for example: Gates, 2000; Grenfell and James, 1998; Harker, 1984; Nash, 1990; Reay, 1995; Zevenbergen, 2001). The main critiques of his work have been written by sociologists who have taken a broader overview of his research (Harker et al., 1990; Jenkins, 2002; Swartz, 1997). The sheer range of Bourdieu's interests has made critiques from within one academic discipline rather one-sided and open to the accusation of being ill-informed (Swartz, 1997, p. 3) or failing to understand the wider aim of his work: the development of a generalised theory of practice. In the same year that Bourdieu's most oft quoted work, *Reproduction*, was published in English, Bernstein wrote of his "boundless respect and admiration for the work of Bourdieu and his colleagues" (1977, p. 14).

Tooley and Darby's (1998) denouncement of Bourdieuan sociology as a useful tool for educational research has been dismissed (Nash, 1999), but what is surprising is that this position could be taken when Bourdieu has a lot to say about mechanisms whereby inequality is reproduced through schools. When Britain has been reported as having "one of the greatest class divides in education in the industrialised world" (Smithers, 2003), it seems prudent to consider theoretical perspectives which might shed light on

the mechanisms whereby inequalities are perpetuated, even if they lack any intrinsic emancipatory power to effect social transformation.

Giroux (1983) takes Bourdieu to task over the nature of his central concept of habitus. In response to Bourdieu's earlier work, particularly *Reproduction*, Giroux considers habitus to be too restrictive and even deterministic; it "constitutes a conceptual straitjacket that provides no room for modification or escape. Thus the notion of habitus smothers the possibility for social change and collapses into a mode of management ideology" (Giroux, 1983, p. 90). This strong reaction seems to boil down to different ideological perspectives. Giroux's radical pedagogy suggests a confidence in the emancipatory potential of his polemic whereas throughout Bourdieu's work there exists a more sceptical position, or in Halsey, Heath et al.'s words, Bourdieu is an "egalitarian pessimist rather than a liberal optimist" (1980, p. 74). For Bourdieu the concern of his intellectual project is to uncover the logic of practices that perpetuate power relations and inequalities in fields which appear to relate actors in a largely homogenous way. Giroux was concerned that after Bourdieu's analyses,

> ...what we are left with is a theory of reproduction that displays no faith in subordinate classes and groups, no hope for their ability or willingness to reinvent and reconstruct the conditions under which they live, work and learn. (Giroux, 1983, p. 95)

This conclusion that Bourdieu's sociological analysis of educational reproduction offers no hope for the subordinated groups is not an altogether accurate reflection of Bourdieu's work. Bourdieu aimed to demonstrate how structuring a broad range of homologous fields were able to reproduce themselves through the structured dispositions and strategies of agents. However, although Bourdieu's project was

primarily concerned with theorising general practice he remained an advocate of social transformation and critique throughout his career, seeking to resist the hegemony of dominant groups with his intellectual voice (Bourdieu, 1998a). Whilst I disagree with Giroux concerning whether or not Bourdieu has *no faith* in the emancipatory self-interests and capabilities of subordinated groups, it is probably the case that the strong theme of inevitability threaded through his work might support Giroux's accusation. Bourdieu's pessimism does contrast somewhat with Giroux's emancipatory optimism but what Bourdieu's analysis offers is the potential for another critical approach with which educators can theorise and mount an intellectual challenge to the dominance of the middle classes in educational systems and the reproduction thereof.

4.4 SUMMARY

The framework detailed above focuses on the sociological work of Bourdieu that I will be using to analyse the social and learning spaces that I have investigated in this research. Notwithstanding the critiques of Bourdieuan theory, he has provided versatile tools with which to undergo an empirical analysis of the case studies. An analysis that brings together the cultural influences that I have described as forming the *learning landscape*. So, broadly speaking, the *learning landscape* is a descriptive tool whereas Bourdieu's framework will be used as a set of analytic tools.

The *learning landscape* metaphor is intended to wrap around this Bourdieuan analysis, allowing, through the exploration of the metaphorical imagery, implications to be explored and communicated in a different form. What the metaphor aims to do is bring the various fields together to comprise an alternative vista over the bigger picture of the

socio-cultural context of mathematics teaching and learning at the primary-secondary interface. Bourdieu's fields are limited but through the notion of *landscape* I want to consider how we must go well beyond the classroom boundaries, the confines of the family and the fluctuations of friendships in order to build a picture of the influences on the learner of mathematics, particularly at this key transfer time. Some of those factors are highly effective whilst others are quite small but even the small influences, as chaos theory suggests, can have a disproportionate affect on the schooling endeavour.

What the two perspectives of this theoretical framework do have in common is a desire to explore the relative stability of the education system and the inequalities that it perpetuates. Whether in theory or through empirical analysis I will excavate the mechanisms whereby classroom practice has remained relatively static and children from lower class (i.e. low cultural and economic capital) backgrounds still have the highest chance of struggling in mathematics and at transfer.

5. METHODS AND PROCEDURES

This chapter describes the methodology that was developed in the light of the theoretical framework outlined in the previous chapter. The techniques were largely ethnographic in nature but the methodology sits within a growing tradition of case study, which has a slightly different theoretical rationale from ethnography. The research process, along with the methods used, evolved over a period of time, partly in response to unforeseen changes in the research context.

Following an introduction to qualitative, ethnographic methods and an account of the evolving nature of the methodology, I will turn my attention to the case study approach before moving on to consider the three main data collection techniques in some detail: participant observation, interviewing and video diary. I will then explore some of the ethical issues associated with the use of these techniques, particularly with children. That leads into an account of the complex and somewhat messy process of analysis and finally to a consideration of how writing itself contributes to the overall methodology.

The chapter is written partly as a theorisation and discussion of the techniques themselves but this is interwoven with a commentary on how the techniques were used and developed at different times in the empirical research process. In order to aid the reader the following figure outlines the data collection process.

Figure 3: Timetable for the data collection process

	Observation	Interviews	Video diaries	Other
Autumn Term – y6	Half- one day per week spent in year six class throughout year ↓	Initial interviews with children	Diary entries one morning per week. ↓	NFER test data from teacher
Spring Term – y6		Morning with each child watching their video diary ↓		
Summer Term – y6		Interviews with parents (long, semi-structured) Interview (pre-transfer) with children and teacher	Diary entry following Induction Day	NC test results
Autumn Term – y 7	Observations in each child's class every ~5th/6th lesson. More frequent at start of term ↓	Interviews with children Interviews with secondary teachers Final interviews with children Final interviews with secondary teachers		Setting Maths test results

5.1 INTRODUCTION

During the early stages of the research I spent time with two classes with a total of approximately sixty children. However, I quickly moved to focus on a group of six children; the decision to work primarily with this small group has been explained in Section 3.2. These children were initially sitting together, as a mixed-ability group, in their year six class, but after a few weeks the class was rearranged. Although at first this seemed to be a setback, it turned out to be a useful precursor of transfer itself, an opportunity to see what happened within the context of the classroom when groupings were altered. I decided to persevere with the six children who would provide case studies of the transition to secondary school. Although most of the data that was collected was qualitative: field notes, interviews and video diaries, I also gathered some assessment data and other material that might enhance the study.

At several points in the data collection I had to adapt to changes in circumstances and was consequently continually reviewing and tweaking the research design. This became particularly pertinent at the approach to transfer itself. One of the six children managed to gain entrance, via entry exam and scholarship, to the city's private boys' school, and so would not transfer to the secondary school with the other children. Also, whilst collecting data in the primary school, the secondary mathematics department changed their grouping policy for year seven. Mathematics had been taught in mixed-ability form groups but was now going to change to two parallel half-year groups, each with four ability sets. These sets would be constructed two or three weeks after transfer. At first sight this development could have been seen as a setback within the context of the

original research design but instead it proved to be very useful when considering the questions steering the research. These changes made it possible for me to explore how each child's habitus influenced the teachers' judgement of their first two weeks and the consequent impact on the setting process. This has indeed become a major aspect of this thesis. As Ball (1980) explains, "these early encounters are of crucial significance not only for understanding what comes later but in actually providing for what comes later" (cited in Delamont and Galton, 1986, p. 45). For him the emphasis is on the responses of children, but here I am interested in the co-constructed positions that arise from the actions of both children and their teachers, and which have direct influence on the future learning trajectories of the children.

Having access to these initial encounters enabled me to see how a second teacher, or as it turned out sometimes a third and fourth teacher, would contribute to this transfer process in mathematics. Moreover, the children had contributed to the process of establishing tutor-groups by suggesting the names of one or two friends they would like to remain with in the new school. This setting process would break down these friendship groups which would enable me to explore how a more extensive renegotiation of peer relationships would affect learning. In addition to these changes, the secondary school changed some of their transfer procedures in mathematics to make better use of the QCA bridging units (QCA, 2000a; 2000b). This presented me with yet another avenue for data collection.

The empirical data was collected via a range of qualitative research methods: participant observation, semi-structured interviews and video diaries. The video diaries developed

into commentaries of broader life events that were occurring out of school; at home and amongst the peer group. This research tool thus became the primary means of opening up avenues of inquiry into two of the three fields outlined in the previous chapter: family and peer culture. The insights afforded by the video diaries into each child's family background were augmented by interviews with past and present teachers as well as through interviews conducted with the parents in the final term before the transfer to secondary school.

Following the transfer to the secondary school the data collection process became more complex with each child having several mathematics teachers in a number of classrooms and at different times on the timetable. However, there was a greater emphasis placed upon teacher interviews in this phase of the research, particularly in the early days following the transfer. Four of the children had their mathematics lessons concurrently in different places and with different teachers, and so with some reluctance I finally took a pragmatic decision to further reduce the number of case study children to four.

5.2 A COLLECTIVE CASE STUDY APPROACH

> There was no need for Galileo to constantly repeat the slope experiment to construct the falling body model. A well-constructed single case is no longer singular. (Bourdieu and Wacquant, 1992a, p. 57)

As this thesis explores the socio-cultural factors which frame learning and schooling, and examines the relative influences of these various cultures upon learners of

mathematics as they transfer schools, my research design makes use of ethnographic qualitative methods. Atkinson and Hammersley (1998, p. 110) describe ethnographic research as "having a substantial number of the following features".

> a strong emphasis on exploring the nature of particular social phenomena, rather than seeking to test out hypotheses about them;
>
> a tendency to work primarily with "unstructured" data, that is, data that have not been coded at the point of data collection in terms of a closed set of analytical categories;
>
> investigation of a small number of cases, perhaps just one case, in detail;
>
> analysis of data that involves explicit interpretation of the meanings and functions of human actions, the product of which takes the form of verbal descriptions and explanations, with quantification and statistical analysis playing a subordinate role at most

Indeed several of these descriptions might well describe the broad aims of this thesis. I am seeking to understand the mechanisms of social reproduction and positioning in education, particularly in mathematics classrooms following school transfer. However, Atkinson and Hammersley's first descriptor of ethnographic research refers to the exploration of phenomenon rather than the testing of hypotheses. Consequently, this research is better described as case study rather than ethnography because a clear theoretical framework underpins it. Commencing with an alternative theorisation of the transfer process and then moving to a case study theorisation of practice, the research cycle proceeded iteratively towards the conclusions reported in Chapter 9.

Stake (1995; 2000) delineates case study research as either *intrinsic* or *instrumental*. In other words, the case study is largely motivated either by an *intrinsic* interest in the single case itself, or is used as an *instrument* to explore some broader concerns. My

theoretical framework, particularly the use of Bourdieu's theory of practice, necessitates an *instrumental* label to be applied to my approach.

Stake describes the boundedness or limitations of case study with his assertion that "case study seems a poor basis for generalisation" (1995, p. 7). However, one's theoretical stance concerning generalisability depends upon the theoretical basis upon which one is making the generalisation, and upon the philosophical understanding of the relationship between the case and the collective, the part and the whole. My collective case study research approach is a critique of the limitations of bounding the study of children's learning within the school boundaries. The dialectic relationship between field and habitus means that from the individual case one can see some representation of the broader fields in which that individual is positioned. This reflects the idea that the *case* is a *case* of some larger groups of possible *cases*.

Conducting multiple case studies, each building on the findings of the others, enables the examination of different positions on the aforementioned landscape, of patterns of dispositions associated with certain social origins. Although this is not a complete mapping, through the triangulation of the social positions of the actors, an increasingly detailed view of the landscape, or at least the dominant features, can be described. Stake goes on to explain that, "there is an emphasis on uniqueness, and that implies knowledge of others that the case is different from, but the first emphasis is on understanding the case itself" (Stake, 1995, p. 8). I would not disagree with that but multiple, collective case studies can lead to a broader understanding of the wider research context. Walton supports this claim with a nautical metaphor:

> Cases come wrapped in theories. They are cases because they embody causal processes operating in microcosm. At bottom, the logic of the case study is to demonstrate a causal argument about how general social forces take shape and produce results in specific settings. That demonstration, in turn, is intended to provide at least one anchor that steadies the ship of generalisation until more anchors can be fixed for eventual boarding. (Walton, 1992, p. 121)

Walton here takes a more instrumentalist position on the value of case study but his description explains my research intentions of exploring generality through a focus on specificity. Simons supports this argument for generalisability:

> One of the advantages cited for case study research is its uniqueness, its capacity for understanding complexity in particular contexts. A corresponding disadvantage often cited is the difficulty of generalising from a single case. Such an observation assumes a polarity and stems from a particular view of research. Looked at differently, from within a holistic perspective and different perception, there is no disjunction. What we have is a paradox, which if acknowledged and explored in depth, yields both unique and universal understanding. (Simons, 1996, p. 225)

Hamel (1993) also disagrees with the criticism that case study approaches can lack representativeness as well as rigour, considering such positions to be 'poorly founded'. Rather, case study methods have, he argues, become "the ideal tool for micro-sociological investigation" (Hamel, 1993, p. 34). All of this sits well with Bourdieu's own description of his sociological method:

> the deepest logic of the social world can be grasped only if one plunges into the particularity of an empirical reality, historically located and dated, but with the object of constructing it as a "special case of what is possible", as Bachelard puts it, that is, as an exemplary case in a finite world of possible configurations. (Bourdieu, 1998b, p. 2)

This research required a case study approach due to my desire to explore a context in depth using qualitative methods but also to explore the wider context in which it is situated. The theoretical framework was developed early on in the research and so has given a clear steer to the evolving methodology. Yin (2003) asserts, as I hinted at earlier, that having such a clear framework underpinning the data collection means that it could not really be classed as an ethnography *per se*, even though I have utilised a range of ethnographic research techniques. For Yin,

> ...case study as a research strategy comprises an all-encompassing method - covering the logic of design, data collection techniques, and specific approaches to data analysis....a comprehensive research strategy. (Yin, 2003, p. 7)

He describes how case study normally relies upon multiple sources of data and that the collection of this data will normally be dependent upon the prior development of theoretical models. His categorisations, being slightly different from that of Stake, are *explanatory*, *exploratory* and *descriptive*. This study is primarily an *explanatory* one as it explores the mechanisms whereby certain children cope better with the move between schools than other children. It is also what Yin terms *multiple* and he expresses a preference for this approach, but this might reveal his interest in certain types of case study research. It seems clear, particularly in the light of Walton's metaphor above, that *explanatory* or *instrumental* studies would often benefit from multiple case approaches whereas *descriptive* studies would arguably not benefit in the same way from multiple cases.

In this study I use the collective, explanatory, instrumental case study data to generalise concerning the larger sociological picture. I will point to some key features of the

sociological landscape and the learning of mathematics but any general findings remain highly complex and contingent upon the uniqueness of the individuals concerned. They are simply generalised patterns, descriptive rather than prescriptive, retrospective rather than predictive. So where there is generalisability from the case there is also recognition that peculiarity remains.

Having presented my rationale for employing case study methodology I will now consider the various techniques that have contributed to the data collection. There are other data that have been used even though they might not be explicit in the case reports. The order in which the methods appear below reflects the chronology of their usage in the study itself and the three sections will not only discuss theoretical aspects of the methodology but will also describe the implementation of the methods.

5.3 PARTICIPANT OBSERVATION

For the classroom researcher there exists an observation-participation continuum from complete participation to complete observer. My observations in the primary classroom began as an observer but soon incorporated a considerable participatory element, such that I often became more participant than observer. However, a classroom ethnographer (or teacher) is no less an observer as a result of increased levels of participation, for effective classroom participation is concomitant with good observation. To 'observe' how a child is responding to the intellectual challenge of solving problems might involve more direct engagement with, or observation of, the child. However, the nature of their observation clearly changes when focussing attention on a group or individual child. Observation and participation are not

independent practices in a school classroom as effective teachers are usually doing both to varying degrees. Nonetheless, what is seen will depend upon how much the researcher observes or directly participates, as different views are made possible from these different vantage points.

By being present as an observer I became part of the object of my observations, I was a part of the classroom, caught in a kind of feedback loop. As such my participation, whether observing from the side of the classroom or conducting impromptu, informal interviews or helping with work, influenced what I observed. When a child in the class became aware of the fact that I was aware of them copying another child's work or using their mobile phone under the table, then their behaviour was modified, according to how they saw me: as researcher, as teacher, and so on. Moreover, that view of me was dependent upon their meaning-giving strategies of their habitus.

I was often fully involved in the classrooms, effectively as a teaching assistant but at the same time I was at liberty to move between more participatory and observational roles and so could leave my work with children to make field notes or observe particular situations as they unfolded. During the initial, whole-class parts of the lesson I was able to focus my efforts on observation, for example, watching how children responded to questioning or handled their failure to complete homework. There was also a fair amount of the time that I spent in school when I was interviewing the children or overseeing the video diary recordings (see Section 5.5).

Whilst in the secondary school classrooms I adopted a more observational and less participatory role. This was due in part to the change in classroom culture, but also was necessitated by my changing relationship to the research participants. Here I was entering the classrooms of, in most cases, experienced ex-colleagues who were in the process of establishing their relationship to the class, work ethos, and so on. In addition, it became clear early on that 'my' children were now responding differently to me in this new environment. Whereas they had been keen to talk to me in the primary classroom or to leave the lesson for a short period of time to talk about their work, for some of the children there was reluctance to do either of these things in these unfamiliar social contexts. In particular, those having greatest concern for the development of new friendships were reluctant to acknowledge any link to me in their developing friendship groups. The children had somehow redefined their relationship to me; I was now more closely identified with the teaching adults in the schools. They did after all know that I had taught in this school and was therefore identified with the teachers.

It was important to maintain reflexivity throughout the research process, both in terms of research design and data collection. Through such reflexivity I acknowledge my own contribution to, and influence in, the data and seek to problematise the ordinary, taken for granted aspects of it. This involves a conscious process of systematically uncovering the unthought meaning-making of my own habitus and a critique that influence. Elements of this can be seen in the case reports, through critique of my interview procedures for example. My own perspective on the data is related to my social position with regards the research context and participants. Consequently the data cannot be relied upon as objectively realistic. On many occasions my presence in the classroom,

and developing relationship with these few children introduced a subtle bias into the situation. I discussed at length with the primary teacher whether or not she was altering her teaching in any way when I was there but she assured me that she was not. Later in an interview with one of the children after the transfer I was told categorically, without prompting, that Mrs Clarkson had taught differently when I was there. One of the secondary mathematics teachers talked of an awareness of changes in her classroom manner when I was present. It is difficult to ascertain the extent to which classroom practices, of pupils and teachers, was modified by my presence but even the perception of difference is important. For the child who thought that her primary teacher behaved differently when I was present she believed that she had perceived an influence on that learning environment, and thereby on her. Her perspective was in a seemingly unrelated interview context, volunteered rather than elicited, and I assume to be reliable, at least in her perception. So what I was seeing was not necessarily what was taking place in my absence, but then it was also not the complete story of what was happening in my presence. I could only see a part and record a fraction of what I saw so the need to acknowledge and critique that process of data selection and interpretation is paramount.

5.4 INTERVIEWING

My initial research design was to spend time regularly in the classroom as a participant observer and conduct individual interviews with these children at regular intervals. As a classroom ethnographer I often conducted unstructured interviews with children about what they were doing. Powney and Watts (1987) explain that conversation becomes interview when "the conversation is initiated by the interviewer for the purpose of obtaining research relevant information and focused on him by content specified by

research objectives of systematic descriptions, prediction or explanation" (p. 6). I had many such field-interviews that provided data in the form of field notes, but in this section I will be focusing on the planned interviews that were undertaken with the individual informants.

I wanted to know about these 10/11 year-old children's experiences of school, their attitudes to school and learning dispositions, their personal beliefs, who their friends were, what life was like at home and so on. I was interested in their parents' perceptions of them, the school, their teachers, mathematics, etc. The main way of accessing much of this information is through the children themselves. Having observed them in the classroom I initiated a semi-structured interviewing procedure with questions grouped around the main ideas that I wanted to discuss with them. In order to introduce this process to the children they were invited to bring something with them that they could talk about; something to do with a personal hobby or interest, for example. Eder and Fingerson (2003) have examined the issue of power dynamics when interviewing children in some depth. They suggest that in order to "create a natural context for the interview, the researcher must also take care to avoid creating situations that remind pupils of classroom lessons based on 'known-answer' questions" (p.36). I used the above procedure to give the children a voice right at the start of the interview; to impress upon them that I was genuinely interested in them, their ideas, their experiences. Having said that, despite the fact that the interviews were flexible and as non-threatening as I could make them, these early interviews did take place just outside of their classroom and the children knew that I was part of the education system.

The interviews began with an uneasy discussion of an interest of theirs and moved on to cover matters concerning school, friends, the teacher, home, siblings, etc. The interviews were recorded to audio-tape, transcribed, and imported into an NVivo project for subsequent coding and analysis. The children had to be reassured about the purpose of recording and the presence of the recorder made one or two of them uneasy. I carried out the transcribing of these interviews myself so as to familiarise myself with the data and provide opportunity for early analysis and ongoing theorisation.

These were the only interviews of this type that were undertaken with the children during year 6 as the video diaries superseded the interview as a data collection tool in the primary phase. These interviews were not unsuccessful but in order to have greater efficacy needed to be underpinned by a greater level of rapport between the children and me:

> Because the goal of unstructured interviewing is understanding it becomes paramount for the researcher to establish rapport...close rapport with the respondents opens doors to more informed research. (Fontana and Frey, 1994, p. 357)

Although Fontana and Frey are here describing unstructured interviewing the need for rapport was clear within my research context, both regarding the areas that I wanted to explore with the children and the imbalanced nature of the relationship between us. Powney and Watts (1987, p. 41) also recognise the importance of such rapport. More importantly they highlight the interpersonal nature of the interview. It is a unique social event where both the interviewer and informant affect one other's contribution, although this effect is asymmetrical.

> ...the respondent is still concerned to bring the occasion off in a way that demonstrates his or her competence as a member of whatever community is invoked by the interview topic.

> This is an inescapable restraint of face to face interaction. The consequence is that the data produced by interviews are social constructs, created by the self-presentation of the respondent and whatever interactional cues have been given off by the interviewer about the acceptability or otherwise of the accounts being presented. (Dingwall, 1997, p. 59)

Dingwall problematizes aspects of interview data collection, highlighting the narrative nature of informants' contributions (see also Gudmundsdottir, 1996) and whereas much of his writing is helpful his assertion that "where interviewers construct data, observers find it" (p. 60) is intriguing. If interviewers construct data then such constructed interview artefacts must depend on the position of the interviewer, particularly if using semi or unstructured interviewing approaches. So in some senses it would be impossible to conduct two identical semi-structured interviews, the outputs would never be exactly the same as the product is dependent upon both interviewer and interviewee. However, if compiling a case study report is a reflexive interweaving of data collected iteratively over a long period of time then much of the situational or interviewer effects can be accounted for through a process of data triangulation (see Section 5.8). This is why the analysis of habitus, and of the learning landscape, using these data is complex and uses the whole range of empirical findings, in order to describe actors' consistent dispositions, strategies and relations. The consistency or transferability of habitus dispositions seen repeatedly and in various contexts distil the data thereby allowing generalisations to be made.

I presume that by contrasting *interviewers' construction* of data with *observers' finding* of data, he means to contrast the contrived nature of interviews with observation, which might be considered to be more natural. However, observation is not considered naturalistically herein as it has the same potential for interpretation. I consider

observation data to be constructed even if the situation which was observed was not constructed simply for my research purposes: I chose when to observe, what and who to look at, and not look at, and what to record. These decisions were not always conscious decisions but they were made, within a relational context where I interacted uniquely with each child. On another day, from a different perspective alternative descriptions might have arisen and although they should also be consistent with one another, within the larger context of mapping the habitus of the individual, they are nonetheless constructed rather than found. If the aim of the research is to understand the role of this habitus in the children's experience of the transfer process, then it important to acknowledge the role of the researcher's habitus in the construction of the data through the schemes of meaning-giving perceptions that act as interpretive lense on the raw data. Here, as with the interview data it is the consistent strategies of the habitus, evidenced through children's actions in a variety of contexts, that offers the potential for reliability.

Although researcher reflexivity is essential the problems associated with interview research do not invalidate the data. On the contrary, the ways that my informants respond to the whole process is in itself a level of meta-data that is highly pertinent to my inquiry: the "interpersonal, interactional, communicative and emotional aspects of the interview" require careful consideration (Cohen and Manion, 1997, p. 279). Research data arising from interviews can certainly not be considered as unbiased as each interview is "an artefact, a joint accomplishment of interviewer and respondent" (Dingwall, 1997, p. 56).

However one chooses to describe the nature of the relationship between informant and researcher it is clear, judging by the children's increased openness, that the interviews

with the children later on in the field work were of a different status from those completed earlier on. May (1993, p. 30) focuses on the notion of trust rather than rapport as a prerequisite principle for successful interviewing and this relational change is no doubt related to this increased trust. I consider this change to be a positive outcome of the lengthy process of data collection but at the same time need to acknowledge that the contribution to the data made by the researcher, whether positive or negative, changes over time. In response to increased understanding and interpretation of the research context the researcher's interpretive schema are themselves evolved. The case reports (Chapter 6) which are the product of the analysis of data arising from interviews, classroom observation and interpreting video diaries are all produced by me as well as those studied. As this longitudinal study continued concurrently with the analysis of the data and the development of my own theoretical perspective so my contribution to the production of data altered. This process is of course highly complex.

When the children moved to the secondary school the taped interview came back into use due to its convenience. Throughout the fieldwork I interviewed the teachers and the parents in addition to the children. The year six teacher, Mrs Clarkson, was interviewed several times through the first year of the study. On some occasions this was pre-planned with the express aim of exploring, for example, the teacher's own personal history, or perspectives on the children. At other times we had short, recorded, discussions about particular incidents that had happened in the previous lesson. One particular example concerned a time when three of the children that I was working with had not completed some part of their homework. Their reasons/excuses were very

revealing and revealed dispositions of the children's habituses that were highly pertinent to my investigation. There was a need to capture this moment and explore it whilst the experience was very recent.

Following the transfer the number of teachers that I was working with increased dramatically, and was further complicated by the setting process in the third week of term. These teachers were interviewed a number of times, both using semi-structured schedules and informally in staff rooms and at the end of lessons. In a similar way to the previous paragraph there were times when we discussed, in an unstructured interview, particular events from the lessons. Each of these teachers was interviewed at the start and end of the term and this included a longer semi-structured interview that explored their mathematical, learning and teaching histories.

Parents were also interviewed, again according to a semi-structured schedule. These interviews varied considerably in length and were mostly completed with the mothers of the children. Only two of the original six children lived with both biological parents and of these only one had the father around for a lot of the time. This situation provokes some questions about the nature of the interview and the interpretation of the data. It also has implications for the effectiveness of this process in the light of my intention of seeing how the child is reproducing the parental or broader class habitus. In fact, these interviews proved to be an extremely useful means of exploring these reproductive tendencies. These interviews were different from those with the teachers and children because of their location in the family homes. Whilst visiting these homes I made observational notes which formed another layer of data. This data included the location

and condition of the house, the state of décor and furnishings inside and an analysis of art, books, the prominence of the television, and so on. This process was not an easy one as most of this data was collected in one long visit to the house. Initial impressions were always very strong but noticing what was informing those impressions and recording that, at the same time as conducting an interview, was somewhat of a challenge and I was all too aware of my own habitus' role in selecting what to notice and how to interpret it. This data was very useful when considering the extent and types of cultural capital in the family and analysing the habitus of the parents (Bourdieu, 1984).

5.5 VIDEO DIARIES

I now want to proceed to consider in some detail the use of the video diaries, and I devote considerable space to this, as it is an innovative method for which there is little directly relevant literature support. It proved to be a very data-rich method but also heightened some of the epistemological and ontological challenges associated with qualitative methods. Whilst video diaries proved to be very useful it is difficult to portray the richness of the data arising from them when resorting to textual representations of the analysis. What I will do in this section is include examples of the data to try and support my account of the development of this research tool, although admittedly these are rather one-dimensional compared to the video material itself.

Whilst transcribing those early interviews with the year 6 children it was clear that my presence in the interview was limiting their freedom, that the power dynamics were working to inhibit the respondents. This may have been due to the fact that, at this point

my relationship to the informants was not well developed but whatever the reason I, the interviewer was inhibiting them. This early example of a conversation with Stacey demonstrates this point:

Andy: Right, I've got one more question. You've talked about your friends and your family and the people on your table. I'd now like you to tell me a little bit about your teacher, Mrs. Clarkson. You can say whatever you want because I am not going to tell her.

Stacey: (nervous giggle) are you sure?

Andy: sure

Stacey: well ... I think she (very hesitant)

Andy: do you want me to stop the tape

Stacey: (pause) are you sure that you will keep it to yourself?

Andy: definitely [stated within the context of our previous agreement that I use this data within my research and therefore share it with colleagues]

Stacey: well I think that she likes other people on my table more than me

Andy: why do you think that?

Stacey: well since my sister went with Mrs. Clarkson it was the same with Laura and she never took any notice of her and that's why she moaned and moaned to go to Mr. Davis.

Andy: So why do you think that she doesn't take any notice of you then?

Stacey: Because I'm much like my sister

This kind of data concerning the historical influence of her family was of particular interest to me, but there was a reticence on the part of the ten-year-old informant. It appeared reasonable to assume that my continued presence in the interviewing process inhibited this kind of disclosure. If semi and unstructured interviews should enable researchers to "probe deeply, to uncover new clues, to open up new dimensions of a

problem and to secure vivid, accurate, inclusive accounts from informants that are based on personal experience" (Burgess, 1982, p. 107), then I still had some way to go with these children. My relationship to the children prevented these interviews from being as effective as they would become in the later stages of the research, when my relationship to the children had developed. In addition to this, I wanted to explore out-of-school influences that had helped to shape their habitus, their dispositions to mathematics and learning, but did not know what that information might be and therefore how to access it. From my classroom observations I had plenty of data concerning attitudes, manners and dress, which would help to develop an understanding of the habitus, but not much concerning other aspects of the children's lives. As an adult, in a position of authority, working with young children, the overall direction of the interview remained firmly in my control, which for my purposes was problematic. In a sense this was still the case with the video diaries but they did allow for other useful data to be collected. Most importantly, the video diaries enabled the children to take control of what was said. In those initial stages I wanted to try and keep the data collection as fluid as possible, somehow reduce my influence over this aspect of my data collection and give the children more autonomy regarding their contributions. In that sense the ethnographic intentions behind the methods were important in grounding the empirical material in the experiences of children and their families.

In the light of these challenges I began to consider the use of alternative ways of collecting the data that would enable me to analyse the habitus of these children and explore the dimensions of their lives that were not visible in the classroom. There was a need for a creative alternative to interviewing that would provide a different perspective

on these children's lives, whilst remaining within the constraints of this school-based phase of the research. From this process arose the possibility of using video diaries. Initially my thinking was in terms of a number of recent television documentaries that have been included a video diary element, e.g. Big Brother, Castaway 2000, Survivor.

5.5.1 Considering the practicalities

Increasingly researchers are using video to record complex classroom interaction for subsequent analysis (for example Goldman-Segall, 1993; 1995; McConnell, 1985; Pirie, 1996). The Third International Mathematics and Science Study (TIMSS), incorporated a large scale video study in 1999 (following an earlier study in 1995) comparing mathematics classrooms in seven countries. This is one significant and more recent example that has yielded some interesting outcomes. However, it soon became apparent that the video diary technique had not been used in quite the way that I was intending to use it so it was difficult to find helpful research material upon which to ground my approach. One contact had written about the use of a similar technique with stroke-recovery patients (Watling, 2001) and I include below some of our email correspondence that helped to shape my thinking:

> *Andrew,*
>
> *My first question is whether you want to make the video diary yourself, or whether you want the Year 6 children to do it. These are quite different proposals. In the first you would be using the camera as a sort of audio-visual research journal and, while it would certainly play a part in data gathering, this role would be much more pronounced (and arguably more exciting and problematic) if you were to hand the camera over to the children.*

(my response:)

I was thinking along the lines of a Castaway 2000 video diary room in the first instance (or perhaps a type of Big Brother although this might be more difficult to manage). The intention was to remove my directing influence in the data gathering (compared with, say, interviewing). The camera would be set up in some designated space and they would operate it and chose if and when they wanted to talk to it. My concern then is how you set up the process so as to maximise the chances of getting useful data out of it.

> *Andrew,*
>
> *I think you may have some problems here. The Castaway 2000 video diaries may look unstructured and spontaneous, but of course they are anything but. Think of it from the programme makers' point of view. They need emotional, provocative, insightful, entertaining, usable, visible, audible material - otherwise they are wasting their money. They will stand a better chance if they create certain technical and personal conditions. The diarists, in other words, have to agree to play the game - agreeing to record emotional, provocative, insightful... contributions, and agree to have them shown. And they already have a notion of what is needed. They know the rules of the game.*
>
> *By all means try the video booth idea. But don't be surprised if the material seems constrained or restrained. I think you will have to give them prompts on what to say, and then run the risk of shaping their comments.*
>
> (Personal correspondence, October 2001, used with permission,)

The quality of the production was not critical as my intention was simply to recreate an environment that might give me more useful (or simply different) data than that afforded to me through interviewing. I provided them with a large beanbag to sit on in the diary room and a number of them pointed out the similarity with the Big Brother programme.

However, what they had observed as being the germane principles of the Big Brother programme were possibly not the same as what adults might consider the key determinants of its popularity. This in fact seems to have been the case, as they did not assume the role of peer critic, for example. Rather, the process developed into a kind of personal diary, 'written' to videotape. Of course I was not guaranteed to get any useful data from this but even if they opened themselves up to the camera a little I felt confident that I was going to get some otherwise inaccessible data.

At the end of this correspondence I decided to proceed with this approach for a couple of months. I arranged to use the biggest camera that I could find, an old VHS model, in an attempt to make the process seem more grand and TV-like, and a good sized tripod. The large beanbag was positioned before a 'screen' (large PE mat) to make the setting more authentic. The children were to have access to this camera on one day a week and would be free to use it whenever they wanted to during that morning. As it turned out, they were so enthusiastic that a rota was arranged and they usually used all of the available time. One girl soon realised, and made clear in her diary entries, that this research gave her a seemingly legitimate opportunity for missing large chunks of lessons and consequently was given a time limit, albeit generous.

The children were, needless to say, very excited about being in front of the camera. They already knew from the previous interviews that they formed my case study group. In addition they knew that I was trying to find out about them as people, as learners, as mathematicians and henceforth how they responded to going to 'the big school'. We had already talked individually about their family, friends, teacher, and so on. With that

history we sat before the camera in a semicircle and discussed three questions. This group briefing was intended to enable them to discuss and form some degree of consensus as to how they would use the video diary. Firstly: what is a video diary? The responses were interesting as it immediately became apparent that the six children had very clear, but differing preconceptions of what this process might be about and how they intended using it:

Toby: Well its like when you talk to the camera and it's like your own diary

Edward: Its like Big Brother cause that was like...er...they sort of always had a camera on you to see what you're doing and they're like taping your actions and stuff

Sonya: Its like telling your diary to the cameras

Marie: It tells you about the people

Stacey: Same as Marie but when you don't want to tell anyone else you can talk to the diary

Edward: like your own private video

Toby: that (Big Brother) isn't private though 'cause millions of people are watching on TV

Matt: It's kind of a place where you can share your feelings without anyone else

So it can be used two ways, either for the diarists to record something for themselves, or as a means for others to gain an understanding of the lives/situations of others. Either way it should be used primarily for the individual to talk about him/herself rather than as a forum for talking about others, unless of course one needed to talk about others in order to describe one's own experiences, e.g. breakdown of friendships. It had the

potential to be either very private or very public. The issue of privacy was seen as very important. The children wanted to know that the diary room was going to be located away from where they could be heard, then they could really say what they wanted.

Leading on from that I asked them what kinds of things might they say to a video diary? They agreed that their diary entries might include feelings, descriptions of what they had been doing, points of view and thoughts about other people. There appeared to be some initial confusion concerning audience. They were told that, as with the taped interviews, I would make every effort to ensure that no-one that they knew would see the video but that I would be watching it, sometimes with colleagues.

We proceeded to discuss what extra things they might, if they so chose, include in their diary to describe their experiences of learning and doing mathematics over the coming weeks. Apart from the groans of disappointment there were some constructive suggestions which in themselves revealed very different kinds of understandings of mathematics. They agreed that they might include thoughts about having used mathematics out of school as well as in school. They also suggested that they could include their feelings about the mathematics that they were doing, or a test result that they had received. As they were keen to get started we set up the room and they proceeded to make their first entries. In encouraging them to talk about mathematics I had in some sense directed their contributions but they also talked about all kinds of things of which I had no prior knowledge. So it turned out to be an allowable constraint that served to provide the framework for the *entry* of other data.

5.5.2 Initial impressions of the diary entries

The first thing that struck me when watching the recording of their entries was the increased depth to their comments as I try to demonstrate below. I had previously interviewed all of these children but their video responses were somehow far more compelling. This may have been due in part to the fact that the only record of the interviews are my transcripts whereas the video diary affords to me other insights via the conscious and/or subconscious interpretations of body language, eye contact, manner, use of voice and so on. Their entries were at times both highly amusing and quite poignant. So, one thing that seemed to be happening was an exaggeration of the previous interview responses, or at the very least my interpretation of their responses, as the following two examples indicate. Of course I cannot hope to demonstrate this to the reader satisfactorily on paper and even though the example below may be convincing, I write it with a very clear mental image of the mode of delivery. This is incommunicable on paper and highlights the strength of this technique, as well as the limitations of text for communication of socio-scientific knowledge.

To try and understand what might be happening here I agreed to video myself talking about the process to pass to my supervisor for video feedback. Having set up the camera I was fully aware of what I was trying to do and that there was no external access to the camera. However, the experience provoked a peculiar emotional effect leaving me feeling very exposed and cautious about what I was saying – much more so than had I been talked with a colleague face-to-face. Unfortunately we did not complete this experiment but the brief encounter did prompt questions about the person-camera

interface that I will consider below. I include here two examples of children's first diary entries in an attempt to demonstrate the method's usefulness.

Example 1

Stacey found a lot of her schoolwork very challenging and has very low self-confidence with regards to her academic performance. This was clear from watching her in the classroom and speaking to the class teacher and was also supported in my interview with her but the diary entry was much more powerful:

> (Stacey enters the room and sits down) I don't know what to say...it's like Big Brother...(pause)...now maths...I hate it, I hate it, I hate it...(pause)...three things about maths...boring, boring, boring
>
> [3 minutes into entry] The thing that makes maths hard for me is that I don't think I'm really good at it...erm...I have to say this prufully...I mean trufully...erm...I know what everyone's thinking...that...I'm the dumbest kid in the class...and...me and Sonya really need desperate help...I'm not saying that she's bad or anything but me and Sonya need really desperate help.

The video record shows her looking down to the right and talking quietly and rather despondently, creating the impression in me that this is genuine. Her comments have, understandably, elicited a sympathetic response from everyone who has seen this video entry and could well be described as 'moving'.

Example 2

On the other hand, contrast this with Matt's relationship with the camera:

[Approx. 2 minutes into interview]...as it is my first day of the diary I find it really good today...(pause for effect)...to get to know...YOU (points, stares and grins proudly at the camera)...because ...first time I've been in front of a camera...don't feel bad... (grins)...feel good...feel famous. (satisfied giggle)

Five of the six children greeted or said goodbye to the camera. Matt was getting to know "YOU" and Stacey, at several points in her entry apologised: "I don't know why I'm telling you this"..."I bet I'm boring you". So who or what were these "you" that the children are addressing themselves to? Did they see the camera as a person? Was that person me? Did they imagine a wider audience as Matt alludes to when he talks of feeling famous? It is unclear from this first entry just what this relationship is or even whether the children have any conceptual understanding of it at all. Perhaps this was related to their perception of this being a public/private process. Identifying this "you" also tells me something about how the children position themselves in relation to the stranger-camera, which is another form of meta-data that aids the analysis of the habitus.

Following an analysis of the complete set of entries it is evident that some of these first encounters contained theatrical elements that were not witnessed later in the series. Over a period of weeks the diary entries reflected a normalising of the child-camera dynamic so that their behaviour before the camera reflected more closely their behaviours elsewhere. This does not render this early evidence useless but rather provides me with a broader range of meta-data about each child. What is required is careful consideration of the distorting effects of this early tendency towards performance in some of the children. It is also important to note that the video data is not used in analytic isolation but is corroborated through the use of other sources. Children's varied

conceptualisation of the camera, though raising interesting questions, is not problematic in the larger research context as through a process of data triangulation the analytic emphasis remains on the mapping of consistent and transferable dispositions of the habitus.

5.5.3 Identity in front of and behind the camera

Even from the time of their initial group discussion concerning how they would use the diary it was clear that different perceptions would exist. These perceptions are linked to the identities that they would present to the camera, where "identities are narratives - stories we tell about ourselves" (Bloustein, 1998, p. 126). Bloustein's research involved teenage girls compiling their own video documentaries over a period of three years. Although they were older than the group I was working with and had far more extensive use of the camera and editing facilities the differences in response to the task have some interesting similarities to my own experiences.

I suggested above that there appears to be dichotomous public/private understanding but this oversimplifies the relationship. As the transcripts show, at least one of the children perceived the camera to be an audience that made him feel famous, and certainly worked to make him more animated and extrovert before the camera in the early weeks. This is all part of the children's play with the camera, experimenting with various stylistic forms; in this case TV presenter, one connecting with the audience through the camera. However, over a period of time the relationship between that child and the camera changed as their experimentation stabilised.

Perhaps the most self-aware child in the group (who, conversely, is one of the least able, academically) provided me with the following comments:

I know you camera are going to show Mr Noyes...well...er...

I'm thinking in my head...(change of voice) why am I talking to this camera it's going to be shown to Mr Noyes. Mr Noyes is a teacher for the school.

There appears to be a third party involved here, i.e. the one that will show me the video, the one she is informing, incorrectly, about my relationship to the school. However this informant is not always consistent; sometimes she is very definitely talking to me, on other occasions she is addressing the third person and at other times she appears to have a non-personal audience. On one occasion I had to enter the diary room to call time on this child and it was only on viewing the videotape that her confusion became apparent:

[Stacey looks from the camera to the door, then back to the camera, then to the door with a stunned look on her face]

How come you can be in two places? If you're watching that...and you just came in there...ugh...booaa

Maybe my intrusion here shattered some illusion that I was somehow viewing her performance live. Later I questioned her about this episode and her explanation was that she was merely joking but I was not convinced. Here was an instance where the researcher wrongly assumed understanding on the part of the informant. Ascertaining whether or not this is happening elsewhere was problematic. On another occasion she described how:

The camera is the like...the only one I could talk to.

You promised that you'd never show this camera and this tape to anyone.

When I first did it I felt like...oh my god...what do I say...I'm really embarrassed...my cheeks probably went really red. I feel more comfortable now...like comfortable... and that's it.

When I look at the camera it's like someone's looking at me...I haven't got a describing word for that.... like scary and in a way relaxing. Every time I do it I need the toilet...well not desperate, desperate...but I'm like thinking "help I'm going to wet myself...I'm scared"...like that but I'm not actually going to wet myself.

...well it hasn't been so much of a diary to me, just someone that I can talk to...well someTHING that I can talk to

After describing the camera as her confidant she seems to move to talking to me, referring to my apparent assurance of confidentiality. It then becomes an unknown observer and finally a depersonalised something. These metamorphoses enable her to view the camera as me or as a listening ear, a counsellor, a confessional that she can come to and speak candidly about her emotions, relationships, and so on. Her diary entries are highly interesting data sources as a result of the high degree of self-awareness that she exhibits, being able to use her space and freedom in front of the camera to make sense of her own experiences. On a number of occasions Stacey expressed a concern that she might be boring the watcher: "I'm boring you I bet" or "I hope I don't bore you with this". Intriguingly Bloustein reports the story of Diane, who is, of all the teenage girls in her study, the most personal with the camera:

'Have I bored you yet?' she would ask of her imagined audience. Towards the end of the fieldwork time, she was to describe the pleasure of using the camera as a diary because 'It became like my best friend...'. (Bloustein, 1998, p. 122)

There are some interesting similarities with Stacey here and I include them here, rather than in Stacey's case report, as it seems they highlight the way in which a reflective person might develop a close relationship with the camera as one who will listen, and understand, where others might not. Bloustein does not tell us what Diane's home and social circumstances are but the fact that Diane's projected self is one with many concerns mirrors something of Stacey's video diary identity.

Another child, Edward, whilst still starting from a similar point in drawing comparisons with Big Brother, developed a different relationship with the camera:

> Hi diary
>
> When I first heard about the video diary I was quite excited and the sort of Pop Stars/Big brother thing came into my head...the first two weeks of coming to do the diary I was quite nervous and blank... Wednesday is my favourite day of the week...first I get to come and talk to you. I actually imagine you as speaking to a long-lost friend like a pen friend or something. It's quite unusual staring at a camera I must confess but after a while of doing it you get used to it. When I'm looking at the camera I sometimes feel confident...sometimes not so confident...It's like speaking to a person that's very short [humour intended]
>
> I like doing it...you can share your thoughts with other people...well things. It's hard to talk to you about my personal life cause I don't talk to anyone about my personal life. You can think about loads of things to say when you're not in front of the camera but when you get there you forget what to say

Whereas these accounts are similar in many respects Stacey wanted a listening ear but the relationship seemed to be more one of dependency rather than in this second

narrative, which is presented to a willing audience who are interested in him. He has thoughts to share and never once suggests in his diary entries that the viewer might find them uninteresting.

When the children are before the camera they are making choices, often subconsciously, about what is appropriate to say. Such decisions arguably depend upon their understanding of the role of the camera and the identity that they have assumed, their ability to understand, edit and describe their own experiences and their willingness to play the game. Bourdieu has written about this 'feel for the game' (Bourdieu, 1990). Whereas he uses this often in terms of middle-class children and parents' feel for how to get the best of the system which is designed for their success, here it is a 'feel for the game' of video diary making in the context of educational research. Not that this is a game that the children have played before but the transposable dispositions of the habitus enable the children to get a feel for it. As I said earlier this might be through the simulations, even parodies, of a variety of established media presentational styles, e.g. documentary, children's TV presenter, confessional chat show, Big Brother, and so on. Moreover this 'feel' is itself a product of the habitus and so useful in my context. If the habitus regulates their responses the researcher is faced with two complementary challenges. The variations in habitus must, of course, be taken into account when interpreting their diary entries but on the other hand an analysis of the variations in style and content of the entries contributes to the process of mapping the habitus. Have the children chosen (consciously or subconsciously) different modes of interfacing with the camera? Assuming that they have, at least in part, conclusions cannot be based on a comparison of the nature and frequency of communications. Children must be

considered separately and some attempt be made to investigate further the nature of their contributions. One way of doing this is through the employment of a stimulated recall process but this protocol has normally been used in a short time period to explore children's learning in the classroom context. Such a time constraint was unnecessary, as my intention in this research was to explore the gradually evolving strategies of the habitus. More useful for me was to corroborate the data collected from observing the videotapes, through joint viewings at a later stage.

Whether one can draw any conclusions from the varied types of child-camera relationships or not, the point that needs to be born in mind is the way in which the child's choice of relationship, itself an improvisation of the habitus, establishes a unique filtering, transforming effect upon their entries. I will consider this again later. One might try to categorise the children's camera identities; e.g. audience, confidant, counsellor, friend, researcher, etc., but in doing so it must be acknowledged that such interpretations are not fixed but may change, not only from entry to entry but within individual camera sessions. There is a sense in which these children feel free to move between camera-roles without contradiction.

5.5.4 Further theoretical and practical aspects of the video diary approach

Much of the literature concerning video methods comes from the field of ethnography and anthropology. Video research is very much a poor relation in the social science arena and there is little agreement on accepted qualitative analysis techniques (Pirie, 1996). Prosser laments this state of affairs:

> The general message, perhaps unwittingly, is that: films, videos and photographs are acceptable only as a means to record data or as illustration and subservient to that of the central narrative: they are an unacceptable way of 'knowing' because they distort that which they claim to illuminate; and images being socially created and mediated are skewed by the socio-context of 'making', 'talking' and 'reading'; and summatively images are so complex that analysis is untenable. (Prosser, 1998, p. 98)

I am in full agreement with Prosser here. The argument that the analysis of such complex data is 'untenable' is significantly flawed. Admittedly, extensive analysis would take a very long time but surely it has much more potential than working on the transcript alone. The data is only complex in that it is a fuller representation of social life, which is itself highly complex. With the increased complexity of the data so the problems facing the researcher in making sense of the data are magnified. Again, analysing the transcripts of the earlier interviews is a more straightforward coding process, but one that fails to account for the significant part of the communication which is non-verbal. If I am seeking to analyse the habitus, it is the looks, the body language, the clothing, and so on, which complement verbal data. That is, if I am actually able to focus on, and make sense of, the data that is before me, I should be able to make a more comprehensive analysis of each child's habitus. Making sense of such data is, of course, the principal challenge.

Here I must reiterate an important point; namely that the video data cannot be considered naturalistically as they are simulated, constructed data. Like the classroom research they cannot be used to make claims of objective truthfulness. It is as if the camera is a filter, somehow providing me with one interpretation of that child at that time. What they say and do is unique to that particular occasion and so cannot inform

the observer of any more complete 'reality'. Only limited information can pass across the camera interface that connects me to the child and even then there is some kind of translation that takes place as I interpret the data. This again is where I bring to my interpretative task my own habitus and cultural capital, with the inherent biases and prejudices that they generate. The task of the researcher is to understand this filtering/translating process so as to reinterpret as closely as possible the original contribution and how that forms a small part of the considerably bigger picture that is the child's whole habitus. Banks (2001) writing about visual research methods explains that:

> Images are no more 'transparent' than written accounts and while film, video and photography do stand in an indexical relationship to that which they represent they are still representations of reality, not a direct encoding of it. As representations they are therefore subject to the influences of their social, cultural and historical contexts of production and consumption. (p.2)

Consideration of these influences within this research is essential. For example the outcomes of this part of the project were dependent upon the children's interpretations of Big Brother and the acceptable behaviour therein. The phrase 'Big Brother' has recently undergone a significant shift, in the wake of the media phenomenon by the same name. When the children that I worked with talked about Big Brother it is this television programme that they are referring to, but probably a 10/11 year-old interpretation of it.

Throughout the 1970s the awful spectre of Big Brother in George Orwell's 1984 spawned a plethora of writings on the subject. Thompson (1970) in his introduction to his treatment of the subject, explains:

> The world of Big Brother is a world of total organisation, total control. Within the boundaries of totalitarianism, nothing is sacred. It allows no legal, customary or moral restraints upon its power. Its citizens have no inalienable rights; only expectations. The individual counts for nothing; the State, for everything. (Thompson, 1970, p. 1)

Orwell's vision for the modern world has not been fulfilled but the Big Brother imagery has remained. Rather than the individual becoming "an insignificant cog with limited independence" (Davies, 1996, p. xi), the outworking of this phenomena has been a rapid but unseen increase in the levels of surveillance under which we live. However, this one-way understanding of the phrase Big Brother has been changed in the public perception by the media. The television programme is an extreme example of surveillance but it is entered into voluntarily, the participants knowing that they are very much in the public gaze, and that the end result of their efforts may well be fame and possibly fortune. The diary room also contains an element of interaction, and differs from my video diary approach. These significant differences ensure that the children approached the project with some excitement; they were the special ones, selected for this privileged role of taking part in their very own type of Big Brother. This effect was clearly present for several of the children at first but the normalisation of the process was also apparent over the first 2/3 weeks.

This, and other, aspects of the research require continual re-examination as the processes and relationships evolve:

> To be reflexive ethnographic video makers need to be aware of how the camera and the video footage become an element of the play between themselves and informants, and how these are interwoven into discourses and practices in the research context. (Pink, 2001, p. 80)

It is these very concerns that I have discussed in part, when considering how the children relate to the camera, how that is interpreted by me, the researcher, and subsequently how that affects the way that I deal with them and develop the project. The process of creating the video diary was very much an evolutionary one whereby all players influenced the others.

5.5.5 Analysing the video diary entries

As for analysis of the data, there exist a variety of approaches that have been employed. Pirie (1996, p. 2) uses a grounded theory approach where ideas for analysis are inspired by watching the video tapes themselves. The analysis is only carried out from the videotapes, there is no transference to audio or transcriptions due to the significant data loss. This is a time-intensive process and there is often a lot of seemingly superfluous material to work through. From my own experience, the 'pearls' that can be found scattered through material are well worth looking for. For some of the children the entries are very rich, with what might be called critical moments appearing densely throughout the video. For others there are periods of awkward silence where my observations focus more on the body language and the nature of the comments immediately following these thinking spaces. My own approach centred initially on what I considered to be the critical moments in each diary entry. One might call them critical incidents and although the context in which I am using this phrase is somewhat different from that of Tripp (1993) the same process can be applied. Whilst my analysis is not primarily concerned with classroom learning there exist lots of critical moments which, as in Tripp's, writing, provide significant insights to the object of my enquiry. For him it is classroom learning, for me it is the analysis of habitus.

Following viewings of the videotape I made a note of critical moments in the entry. These critical incidents often followed a pause, when the child was not really sure what to say next. On some occasions, the children later informed me, they went into the diary room with pre-planned things to say, sometimes in response to the pre-agreed content/questions for the diary. It was after these contributions had been exhausted that some of the most interesting material was recorded. Bloustein also noted a similar phenomenon when she was invited to participate in the construction of her informants' diaries. They would ask her to start with a few basic questions:

> ...the questions seemed to be used as a starting point for the young person to then launch into descriptions or accounts of significant aspects of their lives. Perhaps to be asked questions in this way gives them the licence to be personal. (Bloustein, 1998, p. 120)

The launch metaphor fits well with what was seen in 'my' children's diary entries. These parts of the tapes were often much more natural and as I have already said presented critical information which directed me towards new avenues of inquiry. These moments were transcribed and entered into the NVivo project containing all of my research data for further analysis. So it was that I had a mixed account, often just brief notes but also containing quite detailed sections; verbatim transcripts of critical incidents. Pirie describes something very similar:

> Wood deals with large quantities of tapes by initially creating "logs" which are part descriptive and part verbatim, but not as precise as transcripts. These logs are then coded to some pre-constructed scheme, and actual transcriptions are made of particular episodes if they are considered necessary. There is often movement back and forth between the logs and the videotapes to check the on-going interpretive analysis. (Pirie, 1996, p. 7).

The main problem with moving to this form too early is the considerable reduction in valuable data. An alternative approach is that of Towers (e.g. 1996, cited in Pirie, 1996, p.8):

> ...free-flowing, hand-written notes made during repeated viewings of the tapes. At each reviewing, she elaborates on or revises her comments and ideas, while writing new notes. The original notes are retained, unaltered, creating an ever more detailed dossier that still retains the facility to return to original notations for comparison and verification.

Whatever approach is selected the researcher must remember that the video medium, whilst providing highly complex data, is also a very rich data source. It therefore requires extensive, thorough, well-recorded analysis in order to make the most of it. In addition, as the researcher has a more complete account than, say, an interview transcription, the analysis can be undertaken in collaboration with similarly interested third parties:

> It is essential, not merely luxurious, to be able to re-examine the episodes, what went before and what came after. It is at this point, too that I can exploit one of the real strengths of video as data. I can have others watch the episodes and suggest categories...The categories, of course, will always remain subjective, in that there are no 'right' labels but the analysis becomes more powerful and more revealing as the perspectives of others are brought to bear on my task (Pirie, 1996, p. 3).

There are many complex issues here including:

- When does the researcher move away from the primary data source?
- What is the best way to structure an analysis of the tapes?
- How might one tailor the analytic style to one's particular research interest?

It is perhaps this last question that most helps to determine the choice of analysis. For me, manner, body language and personal presentation are all-important factors in the

analysis of children's habituses. Multiple viewings enabled me to become very familiar with the monologue and gradually I could turn my attention to accompanying body language, 'eye' contact, etc.

As I have already discussed above, the child's chosen mode of camera interfacing has affected the data outcomes. There are probably as many different interpretive relationships with the camera, filtering their entries, as there are children. In order to explore these different relationships part of my analysis involves watching an edited version of the videotape with the child. This is a form of stimulated recall but not employed in the same way as in much classroom video research. Normally the time lag between recording and reviewing is intentionally small, within a week or two at most (McConnell, 1985, p. 179, suggests an ideal time gap of less than 24 hours). However, my research aims do not require the same familiarity with the data context, as my intention is to analyse the children's habitus. It is, perhaps, not so important why they said what they did at that particular time, but rather why they would talk in that way at all. In other words, are their entries consistent with their observational reflections made at a considerably later time? The process of reviewing and discussing the edited tape is intended to shed light on the child's underlying dispositions that caused them to speak, or remain silent, in certain ways. One aim of this stimulated recall process is to confirm, where possible, earlier analysis of the tape and on the other hand, uncover inconsistencies in the children's entries. These viewings were done in one sitting which lasted up to two hours, in which either the child, or I, could stop the tape to expand, explain or ask clarifying questions.

Interestingly this process added yet another layer of meaning. The themes that had become apparent from the earlier video, often arising out of the children's own prioritising of appropriate things to include, were here exemplified. Considerable extra detail was uncovered through this joint reviewing process. These conversations were included in the NVivo 'logs' for subsequent analysis. It was as if the original video diary acted so as to open doors hidden to me, enabling further exploration of the dispositions that comprise the habitus. For example, several of the children's entries touched on aspects of peer conflict that they had experienced. They were able to elucidate further those encounters during our video observations.

Although I have devoted a large part of this chapter to a discussion of this video diary technique it is important to note that the data arising from them only forms part of the total data. What the diaries were most successful in doing was opening up areas for discussion with the children and with their parents. In addition the entries contributed to the ongoing cyclical analysis and theorisation process and so informed the later interviewing and classroom observation activity.

5.6 ETHICAL CONSIDERATIONS

There are ethical considerations involved in any form of social research and these are particularly important when working with children. These are perhaps most acute when using video material as it is there that some of the complex issues surrounding anonymity and consent are most clearly seen. Prosser (2000, p. 132) has explained how "the ethics of visual research is in its infancy, and, metaphorically speaking, located near the centre of a complex moral maze". That 'moral maze' is part of a larger ethical

landscape that is evolving and contested (Christians, 2000) and so any discussion of ethics in a post-modern age needs to acknowledge the situatedness of ethical/moral perspectives (Simons and Usher, 2000). Having said that, the literature retains the central importance of the ethical principles of informed consent, anonymity, confidentiality, and so on. A situated ethical stance seeks to clarify what these mean in the specific context.

Suffice to say that parental consent was given for children to engage with this research. Both the children and the adults that were interviewed received explanations of the evolving aims of the research and were given opportunity to ask questions concerning the project and to withdraw from all or part of the process if they so desired. This is all part of the 'reasonable informed consent' described by Cohen, Manion and Morrisey (2000). However, within the imbalanced power relationship of (ex-teacher) adult and child it would have been difficult for these children to opt out of the research process, despite my continued attention to this aspect of their informed consent. There are clearly problems with the clarity of the terms 'reasonable' and 'informed'. Another difficulty with the level of information given to children arose as a result of the evolving methodological framework, particularly the introduction of visual methods. As Cohen, Manion *et al.* explain,

> Whatever the ethical stance one assumes, and no matter what forethought one brings to bear on ones' work, there will always be unknown and unforeseen problems and difficulties lying in wait. (Cohen et al., 2000, p. 32)

Parental consent had been given for the children's involvement in the research at the outset, even though this was fairly broad in its scope. An explanation had been made to the case study group regarding the extent of confidentiality of the recorded conversations: these would be used by other colleagues and myself but not with anyone who knew them; friends, teachers, parents. I was quite careful about this as whilst not wanting to betray their confidence I did want to be able to present this research to my academic peers. However, I experienced considerable unease concerning the use of video material. Did the parental consent that I had received from the parents to engage the children in my research cover such use of video? I discussed this with the head teacher of the school and agreed to a general principle that the video footage would not be reproduced or be made generally available to others, e.g. on the Internet. Moreover, clearly 'sensitive' information or any form of disclosure which could precipitate consideration of a referral of the child could not be viewed by others. We did not discuss my researcher position if this latter situation did arise, which, with hindsight should have been discussed but as it turned out, no such situation did arise. Working closely with a class teacher, when you have detailed data concerning a child required me to be very careful about the discussions we had concerning the children: which information was common knowledge (i.e. publicly volunteered) and what was private.

In moving from using taped interview data to video recordings the emerging ethical issues become more complex. I had in my possession moving images of these children and although I know that my research is being conducted "within an ethic of respect for persons" (British Educational Research Association's Ethical Guidelines, 1) there is a need for greater accountability for those researchers who are working with such images.

The aforementioned BERA guidelines contain only very broad principles outlining responsibility to the participants and as Prosser urges there is a need for the development of particular guidelines for researchers using visual methods. The children involved in this study had been appropriately informed as the research has unfolded. In addition, the children had been briefed and asked whether they wanted to participate. To what extent their consent was informed is difficult to ascertain, "the general trend is for studies to show that comprehension of consent information is poor" (Lindsay, 2000, p. 12).

Regarding anonymity the BERA guidelines point out that "informants and participants have a right to remain anonymous" (number 13) but this also is problematic. What is anonymity? If I was to change the children's names would that be enough to make them anonymous? Kvale (1996, p. 115) highlights the conflict between the "ethical demands for confidentiality and the basic principles of scientific research". For Kvale, confidentiality implies that the children in my study cannot be identified from data reported in my research. However, if someone knew the identity of the school in which I was working it would not be difficult to identify the case study group. In fact the type of data that I have collected is, by its very nature, capable of being used to identify the informants. With such detailed case studies of children's social experience, "there is no absolute guarantee of total anonymity" (Cohen et al., 2000, p. 62). Consequently, I have had to exercise great caution when selecting the data that is used explicitly within research reports and papers. That might be possible when writing a journal paper, or a thesis, but becomes more problematic when it comes to presenting video footage. Changing the name seems rather irrelevant if the face of the child can be recognised.

This was an ongoing tension in the research and I sought permission from the children whenever the video material was used in, for example, a conference presentation. However, since the completion of the data collection some time ago I have presented sections of the video material on a number of occasions, both to student teachers and conferences. I have maintained the ethical stance espoused by BERA but remain somewhat uneasy about this.

Eder and Fingerson (2003) express a concern about how ethical considerations are reduced to the protection of children's rights. They argue for 'reciprocity' to be part of the ethical frameworks of those working with children. Such reciprocity would seek to redress a considerable power imbalance that could lead to children simply being used to generate data. They argue that research on children should give something back to those children and I although my overall research project might not have been successful in doing this, the video diary element arguably did give the children "a greater sense of empowerment" (Eder and Fingerson, 2003, p. 37).

Before finishing this section I will consider a theoretical dilemma arising from a commitment to ensuring anonymity. Whilst considering the adoption of pseudonyms there is a problem within the theoretical framework that I am using. The interpretation of children's names comprises an aspect of the model that has resulted from this study (see Chapter 7), reflecting the naming 'taste' and cultural capital of the family (Bourdieu, 1984). I will show that teachers (and researchers) form subconscious opinions of children upon the basis of these names. Naming is not an arbitrary, random process but itself is a strategy of the habitus, itself a product of one's social milieu. So it

is that the names in this thesis are pseudonyms, but the choice of alternatives has not been easy. I have used a mixture of sibling names, middle names (where I consider them to fit) and names based upon my experience of working with hundreds of children and families. However, my naming 'taste' is not value-free so whilst the children's names try to reflect something of their social milieu they are not the names their parents gave to them and might well say as much about my own social origins as the children's parents.

5.7 DATA ANALYSIS

I described the data analysis earlier as complex and messy. Here I will briefly explain that process and will try to show how the planned considered aspects of the data analysis intersected with the more chaotic analysis that happened in an ongoing way through living with the data over a long period of time. In trying to understand my own approach to this data analysis it is clear, to me at least, that my approach is very much shaped by my own habitus whereby a strongly strategic set of dispositions tussle with the improvisatory, innovative enthusiasm. Whilst the first group of dispositions are tidy, ordered and efficient the latter lead to unpredictable, creative output which can be messy but nevertheless contain interesting ideas. This tension is even reflected in the choice of software made early on in the study.

In the early phases of the methodological planning I considered a number of qualitative data analysis software packages. My early design, and the theoretical framework left me wanting to explore aspects of social structure and so for that I considered using Nudist or NVivo. NVivo offers the opportunity to structure data in 'trees' (as in Nudist) whilst also allowing for linkages to be modelled across those trees. At the same time I wanted

to examine how a wide range of socio-cultural factors were interrelated and impacted upon learners of mathematics at transfer and for that I needed software with much less architectural structure, for example Atlas/ti. Following discussions with colleagues, reference to the CAQDAS website, and Barry's (1998) helpful comparative article I made a decision to use NVivo as it offered the structure of the popular Nudist software whilst at the same time offering some modelling flexibility.

The transcripts of interviews, video diary 'logs' and field notes were all collated in a NVivo project where they were coded and recoded. These codes were initially based around the three fields described in Chapter 4: school, family and youth culture (or the peer group). However, these codes were supplemented in a process akin to grounded theory, whereby I divided the three field categories into subcategories and included some free nodes that connected them, for example *conflict*.

Using these codes models were formulated and reformulated, partly through a regular process of writing (Noyes, 2002; 2003b; 2004a), theorising and further data collection. So there was an evolutionary, iterative process taking place which leapt forwards at critical points in the research, i.e. immediately following the video diaries, or the transfer to the secondary school. Much of the data analysis was fragmentary in nature. Sometimes it was carried out in front of the computer in a systematic way but on other occasions ideas were formulated in a far less well-defined, even subconscious way. Sometimes an event in the classroom sheds light on other bits of data and the analytic process proceeds in that moment in a new direction, or with renewed pace.

When living closely with the data, constantly mulling through it and considering different approaches, it seems to not always be through conscious processes that one makes the personal breakthroughs in conceptualisation and understanding. Stake's description is helpful here: "for assertions, we draw from understandings deep within us, understandings whose derivation may be some hidden mix of personal experience, scholarship, assertions of other researchers..." (Stake, 1995, p. 12). This aptly describes my own experience. One final element to the analytic process is writing and I shall briefly consider this at the end of the chapter.

5.8 VALIDITY AND RELIABILITY

Through the use of this variety of techniques with a wide range of participants I have sought to validate the various findings through a triangulation process. To be more precise this is 'data triangulation' as opposed to observer, methodological or theory triangulation (Denzin (1988) cited in Robson, 2002, p. 174). That is not to say that I am necessarily getting any nearer to uncovering some objective reality but that the empirical data is enriched. The use of mixed method approaches has been questioned (Silverman, 2000, p. 98), but as I have already explained case study methodology allows for the use of, and makes theoretical defence of, multiple data sources and explains how this offers the possibility of strengthening case reports. Also within my Bourdieuan framework the need to interview parents and teachers as well as conduct participant observation in the classroom is important. A potential issue arising from this process of data triangulation, that data from different sources might be contradictory, has not been an issue. This is due in part to the central aim of exposing the internally consistent and transferable dispositions of the habitus. This process has a filtering effect on some of the data whilst

at the same time generates, through analysis, a kind of internal consistency and self-confirmatory potential to the data itself.

The video diary approach acted to inform the out-of-classroom aspects of the empirical work, rather like a bridge that links the family, peer and classroom fields together. To use another analogy, the video diaries became central in the sense that they were full of data 'hyperlinks' connecting the individual children to a variety of current and historical school and family contexts. So it is not simply that the multiple methods provide a clearer picture but that they present a number of interrelated and overlapping pictures. These can somehow be superimposed, within the theoretical framework, to construct an image of the situation that whilst still subjective in nature is multidimensional: a of holographic data picture. What this multiple-method, triangulated approach does do is reduce the "threat to validity" (Robson, 2002, p. 174) arising from positivistic critiques of qualitative research. The validity arises not just from the methods themselves but from these methods used together with the clear theoretical framework that they are being employed to explore. As I have explained earlier, in relation to the data analysis, it is in looking for consistencies and transferability in the dispositional strategies of the various actors, both children and teachers, that there comes increasing confidence in the data's reliability.

5.9 WRITING

Ethnographic research and case study approaches are both process and product. So, the writing of the case reports, and indeed the whole thesis, is an integral part of the research process where decisions are made, both consciously and subconsciously,

concerning the content and style of the written communication of the research. One way of describing this writing process is that it is the construction of a narrative 'person' or 'voice' with which I then subsequently dialogue. This process might result in me mutating that created 'voice' but also, through the rereading of that account, my own thinking is somehow inexplicably moved on. The writing process, being interwoven throughout the research, constructs a reflexive thinking or dialoguing space. Moreover that thinking space, being as it is partly outside of me, includes other people at various times. So this thesis is not a summative account written after the completion of the study but has grown with the theoretical and empirical developments throughout the project. This approach enabled me to think in helpful ways but has also brought challenges in the final stages of the thesis as it is a historically constructed piece which contains earlier and later thinking. Maintaining the history whilst ensuring internal consistency is not easy.

Richardson explains that "writing as a method of inquiry...provides a research practice through which we can investigate how we construct the world, ourselves and others" (2000, p. 924). As I have already explained in the thesis introduction this research tells a story about me and in that sense there is an auto-ethnographic shadow over it. That autobiographical shadow might go unnoticed but it precipitates interpretations of what I have written that relate to the extent to which the reader knows me. Of course my challenge is to either limit this effect or to make it very clear, hence the introduction.

The writing of the case reports and the thesis is critical in the sense that it is the interface between my research and what I have learnt from it and what others might learn from it.

The thesis is not the totality of my research, nor can it adequately report the complexity of my thinking in this area. Language provides the researcher with both affordances and constraints and between the communication of my work in written form and the reader's interpretation of what I have written, a translation process takes place. I have suggested throughout that any reader of this writing will come to a different place of understanding, depending on what their relationship to the author is and upon their own habitus. Consequently, if research is to be understood and beneficial, to whatever degree this is possible, by those other than the researcher themselves, we must concede that even in the writing and reading of the final report, the research process is still continuing.

5.10 SUMMARY

This chapter has explored the various qualitative components of the case study methodology: interviewing, participant observation and video diary. The first two have been written about at length for a long time and so I have here considered their application in this research context. However, I have devoted a disproportionate amount of space to the video diary technique as this made a novel contribution to the research and has been very useful in the light of the theoretical perspective I have adopted. In seeking to research the children's experience in a number of different fields the video diary offered multiple lenses into these contexts. As such their usefulness exceeded my expectations, and whilst they by no means were the only, or even most substantial data collection method they offered unique perspectives on these children's experiences of life. They accessed data that might otherwise have remained hidden and unexplored.

I have tried to address some of the criticisms of qualitative case study methodology but admittedly this defence is made partly from a methodological and partly from a theoretical perspective. There are clearly ethical concerns around the use of visual research methods and although I am confident I have conducted this research within broad ethical principles it is clear that this aspect of the methodology could have been tidier.

At the end of the chapter I have referred to the importance of writing in the process of research. The use of video diary data, none of which is communicated herein in raw form, has thrown this issue into relief. It has made me very aware how data that is lost in the translation from original context, through collection, interpretation, analysis, reinterpretation and so on, right through to the construction of the thesis.

6. THE CASE STUDIES: PRE-TRANSFER

In this chapter I will commence my analysis of the empirical data collected during the three terms spent in the primary school. This will be in the form of case reports of four of the original six children. These reports are the products of a lengthy, iterative process of data collection, analysis and writing. As I highlighted above these reports are pictures or 'portraits' that whilst representative are nonetheless my distinctive creations. As such I will conclude each of the reports of the children with a 'sketch' that highlights what I consider to be the dominant dispositions and how they are structured by, and in a lesser way structure, the fields under inquiry.

In order to organise these accounts so as to reflect the chronology of these children's experience of school, and the way in which secondary teachers encounter the children, I present a pre-transfer picture in this chapter. This will be followed in Chapter 8 by an introduction of the beckoning 'big school' and thereafter in Chapter 9 by the post-transfer stories and analysis.

The intention of all of these accounts is to enable the reader to 'see' the habitus of the individuals concerned and thereby to begin to look at the structuring effects of the fields in which they are situated: family, school and peer group.

6.1 INTRODUCTION TO THE CASE REPORTS

Having devoted considerable space to exploring the theoretical and methodological frameworks of this research I will now present my case reports. These reports comprise the narratives of children, their parents and teachers as well as my own analysis. However, they are *my* presentations, *my* reports, since I have analysed, edited and compiled their words and actions. These case reports then belong in part to me, the teller, and in part to the participants themselves. Therefore, it is crucial that reflexivity is embedded in the processes and products of the analysis. Concerns about reflexivity in social science research and theory have increased (Beck, Giddens, and Lash, 1994; May, 1999) because, as Hammersley and Atkinson (1995, p. 16) highlight, "reflexivity... implies that the orientations of researchers will be shaped by their socio-historical locations, including the values and interests that these locations confer upon them". They later warn that,

> Overemphasis on the role of creative imagination in the development of analytic ideas also leads us to forget the function that our existing knowledge of the social world performs in this process. (Hammersley and Atkinson, 1995, p. 210)

Their intention here is not that researchers should not be creative, but that they should maintain a level of reflexive criticality and balance in their analysis of the data. The following accounts result from engagement with the data and theory in an iterative cycle of analysis, theorisation and writing. They are accounts of the 'empirical realities' that Bourdieu (1998b, p. 2) was so keen to retain at the centre of his theorising of practice.

My aims in presenting the case reports that develop through the ensuing chapters are the following:

1. **An examination of the habitus of the children** (and in a smaller way the teachers). This will be done through the analysis of data that exemplify the durable dispositions that comprise the habitus, i.e. those dispositions repeatedly seen in the data, either in consistent or transferred strategies, actions and behaviours. This necessarily includes the consideration of the impact of the family backgrounds, peer groups and subgroups and the wider social context.
2. **A mapping of the fields from each child's perspective**. As part of the process of exploring the habitus I will locate the children's mathematics learning dispositions and trajectories in the context of the unseen, structuring fields of their particular social backgrounds, as well as within the school context.
3. **An analysis of the changing learning landscape.** Finally this field mapping will leave me in a position to revisit the learning landscape model and consider where each of the children are located, and how they are moving, and being moved, on that landscape. The field mapping has considerable overlap with this charting of children's pathways across the landscape.

These broadly match with what Grenfell (1996) described as a typical Bourdieuan field study:

> ...the field is studied in terms of three distinct levels as follows:
>
> 1. Analyse the habitus of the agents; the systems of dispositions they have acquired from a particular life context.
>
> 2. Map the objective structure of relations between positions in the field
>
> 3. Analyse the position of the field within fields; in particular, to those defining the legitimate content of the discourse. (Grenfell, 1996, p. 291)

Although I do not separate these three stages in the following chapters the same three components can be seen in the case reports of Chapters 6-8 and the further analysis in Chapter 9.

The remainder of this chapter reports on the research carried out with the subjects during their last year in the primary school. I have so divided the data analysis into two (pre- and post-transfer), in order to assist the reader to 'see' the children as I 'saw' them at the point of school transfer, although admittedly these case reports have been written after I had seen the full picture, including the post-transfer period. I deal with the teachers in a largely distinct way in Chapter 8 and the narratives are continued into the post-transfer period in Chapter 9.

Traditionally, text is read in a sequential linear fashion but this is limiting as the stories themselves are complex, non-linear and interwoven, often moving in different directions, intersecting at different times in different ways. Each of the children and teachers is positioned in and by the three social fields at any given time, with those fields exerting different kinds and strengths of effect. Sensory data are experienced, 'recorded', analysed and made sense of in a multidimensional way, but in committing this work to paper it has, of necessity, become rather one dimensional. However, as I have already explained, making sense of such complex observational data is of course a socially constructed, interpretive function of the observer's habitus and so this study has sought to critique that subjective sense making.

I now turn my attention to the four children who will become the focus of the remainder of the thesis. I have tried to incorporate the children's voices into this analysis and so have used extracts from diary entries and interviews. Sometimes these are quite lengthy extracts and have not been fragmented because of the way that the important ideas interweave. Although this means that the analysis of children' and parents' accounts sometimes continue long after the extract, the integrity of their voices is retained as best as possible. This retention of the inter-relatedness of children's experience is important, considering how this research is concerned with how the strategies of the habitus, as seen in classroom dispositions to learning (mathematics) and to other people, are related to those enacted elsewhere. Such strategic actions are shaped by overlapping fields and cannot be oversimplified without losing sight of the "complex messiness" (Reay, 1995, p. 357) that this study endeavours to explore. Where theoretically and analytically appropriate I have divided the extracts to draw the reader's attention to particular aspects of pupils' and teachers' narrative accounts.

The other point that the reader should note concerns the flow of analysis reported in the following case reports. I have constructed the cases here with enough discussion to justify the inclusion of particular data, and to theorise aspects of the child's experience of life, school and learning. In the chapter summary I have represented each child's social world in a simple diagrammatic form. The intention is to tease apart the overlapping social fields in which they exist to examine the harmony or discord that exists between them. At the risk of oversimplifying the data, these diagrams help the reader to see the dominant areas of these social worlds and provide the basis for an analysis of the effect of transfer in the summary of Chapters 9 and 10.

6.2 STACEY

Of the four case studies of children that are included herein, Stacey was the child who had attained the least in her school mathematics. This relative low attainment was mirrored in her other subjects, although when I began working with her, she had not long since discovered a hidden 'talent' for playing chess and would happily tell me who she had recently beaten. Despite her academic record she proved to be the child that was most capable of reflecting upon her personal and social circumstances, being able to articulate her thoughts and feelings clearly, although sometimes with muddled speech. Her 'style of speech and accent' (Bourdieu, 1974, p. 39), being unsophisticated in comparison to the other children, and regularly containing spoken errors, suggested early on that she came from a lower income family. Such a deduction, although made almost subconsciously as an interpretation of my habitus, is predicated upon the idea that linguistic capital is a form of cultural capital, which is associated with the economic resources in the home. Her lack of such linguistic capital puts her at an immediate disadvantage in the schooling field, because although schools require linguistic 'ability', which is not really ability but the result of family socialisation, they do not give it:

> An educational system which puts into practice an implicit pedagogic action, requiring initial familiarity with the dominant culture, and which proceeds by imperceptible familiarisation, offers information and training which can be received and acquired only by the subjects endowed with the system of predispositions that is the condition for the success of transmission and of the inculcation of the culture. By doing away with giving explicitly to everyone what it implicitly demands of everyone, the educational system demands of everyone alike that they have what it does not give. This consists mainly of the linguistic and cultural competence and that relationship of familiarity with culture which can only be

> produced by family upbringing when it transmits the dominant culture. (Bourdieu, 1973, p. 80)

So only those children who come already endowed with such capital are in a position to make the most of the opportunities it purports to offer equitably to all children (Bourdieu, 1974). This issue of language will arise, either with positive or negative effect, for each of the other children. A large US study has reported convincing evidence of the long term impact of language used in the home upon children's learning, particularly during the pre-school years (Hart and Risley, 2003). This is the same period in which many of the primary dispositions of the habitus are established. As Swartz (1997) explains:

> ...primary socialisation in Bourdieu's view is more formative of internal dispositions than subsequent socialisation experiences. There is an ongoing adaptation process as habitus encounters new situations, but this process tends to be slow, unconscious, and tends to elaborate rather than alter fundamentally the primary dispositions. (Swartz, 1997, p. 107)

Stacey lived at home with her mum and sister, four years her senior. They were located not far from the school in a small semi-detached property. On the first occasion I visited the house, having arranged to talk with mum one weekday evening, the surprised older sister opened the door. I was duly informed that mum had gone to a Rod Stewart concert. Stacey's mum subsequently contacted me and apologised profusely for having taken the last minute offer of a ticket. We rearranged the interview. I did not pursue this episode with Stacey's mum but it shows one of the very different kinds of response I had from the parents of the children. Did she simply forget our arrangement? Or perhaps she was fully aware that these two events coincided but chose to see Rod Stewart over giving an interview with an unknown researcher, which is understandable.

Stacey often spoke of her relationship to her older sister, usually in negative terms, describing what Laura had said or done to her. In her first diary entry Stacey made it clear what she thought about, or what she wanted me to think she thought about, mathematics. This transcript has already appeared in Chapter 5 but I include it again here as the point at which Stacey spoke for the first time about her sister:

Stacey's diary : don't know what to say it's like Big Brother

Maths...I hate it! I hate it! I hate it! Three things about maths...boring, boring, boring!

[follow-up interview]

Andy Would you like to explain a bit about that

Stacey I don't like maths cause it's hard

Andy Could you be more specific?

Stacey Well I can't really time [multiply] that well...my sister calls me a dumb-ass, excuse me.

Andy Is your sister good at maths?

Stacey I don't know, she doesn't go to school ever.

Andy How old is she?

Stacey Sixteen

Andy What year is she in?

Stacey Er...year 10 or 11

Andy So she just doesn't go to school.

Stacey Well she does sometimes...it depends whether my mum makes her.

Andy What does she do when she doesn't go to school?

Stacey She hangs around with her friends.

Andy Who are they?

Stacey	Tammy Watson, but they ran away twice so they are not allowed to make contact with each other so Laura's getting mardy and she pretends to be ill.
Andy	Do you get on with your sister?
Stacey	Sometimes, we're not like those kind of people who always fight but we do kind of hit each other and stuff but we do get along.
Andy	Do you think that you are similar to one another or different?
Stacey	Quite different...she's dead skinny

The move to talking about her sister effectively shifted my attention away from mathematics through her admission that her sister calls her a "dumb-ass". That she shares this information so easily, and in such a way, fits with her mothers' description of Laura as a "little shit, no a big shit" (see below). Such derogatory comments are evidently acceptable descriptors of immediate relatives and this family hierarchy appears to pass this attitude down from mother to the older daughter, and then to Stacey. The only difference here was that Stacey makes some form of an apology, whereas her mother is unapologetic, and evidently does not consider a need to be. The use of such language indicates how apparently 'fair' school systems, if they assume that their own values are the only values, are actually unfair when they penalise children for speaking in ways that are acceptable, even encouraged, within their own social milieu. So, not only was the general style of Stacey's language probably inhibiting her progress, but also the specific content of her vocabulary could have disadvantaged Stacey in the school culture.

Secondly, there is clearly as issue in the above transcript regarding Laura's school attendance. Stacey's attendance at school was good throughout her final year in primary school but her perception that her older sister attended school only when her mum

'made her' indicates that Stacey considered there to be times when her mum didn't make Laura go to school. Moreover, Stacey was aware that Laura was not alone in this, but part of a subculture of school refusal ("her friends"). In addition, she knows something of her sister's strategies for school avoidance. As I have said already, these influences had not apparently impacted Stacey's school attendance to date but her description of mathematics as "boring, boring, boring" betrays dispositions of disaffection.

Thirdly, in the above transcript can be seen observations of external similarity and these observed differences between siblings or between the children and their parents were not uncommon. For Stacey, her comments regarding her appearance were nearly always negatively framed, other people having told her that she is fat, or ugly. At school she was always dressed in the correct school uniform but it had a rather well worn look that is notable in this suburban school classroom, where the majority of children were very well presented. The economic circumstances of the children were in this way partially revealed. I say *partially* as there is the added complexity of how families prioritise school uniform over other uses for their resources, for example holidays, leisure activities or further educational opportunities. Stacey, like her peers did not once indicate that discussion of sibling-similarities could be concerned with character or attitudes. This inability to see the way in which family members are socialised into similar ways of acting and talking was not limited to the children. The parents also found it difficult to reflect on this process within their family contexts. Later whilst watching the same diary entry I questioned Stacey about her incessant fiddling with the sleeve of her jumper:

Andy Tell me about this jumper...look at those sleeves. Why do you fiddle with it so much? Is it just that jumper or do you do it with all of your clothes?

Stacey Just this jumper. It's because it's like ten years old.

Andy So was it your sisters as well?

Stacey Yeah. My sister was so fat when she was younger but now she's dead skinny

Andy Do you think that you will go dead skinny then?

[Stacey shakes her head]

Here is another example where Stacey's brings to the surface concerns about her body, albeit not directly. My question here was seeking to explore the extent to which Stacey thought she would simply follow her sister, as this sentiment appeared elsewhere in the narratives of Stacey, her mum and her teachers. In this instance there was no apparent need to volunteer this comparison between the two siblings, but a recollection of the sister wearing of this jumper triggers thoughts concerning body shape. Bourdieu explained how

"taste, a class culture turned into nature, that is, *embodied*, helps to shape the class body." (Bourdieu, 1984, p. 190). Stacey, and her mum, had such "class bodies".

Stacey has already informed her diary that she hated maths but later during that diary entry she proceeded to explain what mathematics made her feel like. Here again we see the influence of the older sister:

Diary entry: The thing that makes maths hard for me is that I don't think I'm really good at it...erm...I have to say this prufully, I mean trufully...erm...I know what everyone's thinking, that...I'm the dumbest kid in the class...and...me and Sonya really need desperate help. I'm not saying that she's bad or anything but me and Sonya need really desperate help.

[follow-up interview]

Andy	Do you really think that everybody thinks you're the dumbest kid in the class? [Stacey nods] How do you know that?
Stacey	Because every time I put my hand up I normally like, roughly get it wrong.
Andy	But you do get some things right don't you? Do you still think that Mrs Clarkson doesn't like you?
Stacey	She didn't like my sister as well. She kept on shouting at my sister and everything.
Andy	She doesn't shout at you though does she?
Stacey	Well not roughly. She kind of like shouts a bit then after I've done my spelling test she goes [teacher voice] "I just want the best for you".
Andy	Do you think that she does want the best for you?
Stacey	No.
Andy	What do you think that she does want then?
Stacey	Erm to be like Matt cause everyone thinks that like Matt's the teachers pet...my sister says that I might have to go to a school that helps people that like need help...but I'm scared of that...don't know why I'm telling you that.
Andy	I would think that you are scared of that. Did she say where you would go?
Stacey	No she said like this school where all the dumb kids have to go and you never see your mum or dad again.

Stacey did often "roughly, get it wrong" in lessons that I observed, and although she didn't appear to mind much in the classroom, it was clearly a cause of anxiety, confirming her self-designation as "the dumbest kid in the class". She evidently felt that

she would not be able to please the teacher if she could not become like Matt, and her mocking use of the teacher's voice adds further weight to her feeling that her best was not good enough. Stacey's simple understanding of how teacher rhetoric can disguise subtle forms of favouritism reveals her sense of how the school system is unjust. She knows that the school field values highly successes like Matt and she also knows that despite her best efforts she cannot be like him. Carr and Kurtz-Costes (1994, p. 264) point out that "teachers' subtle messages to children about their abilities influence not only their view of themselves, but also their classmates' expectations for their academic performance". Even in the normal interactions of the year six classroom such 'subtle messages' to both Matt and Stacey enable them to get a much clearer idea of their relative position in the group. In the above example, "I just want the best for you" there are a number of inferences that Stacey might well have made:

- The teacher thinks I didn't do well on my spelling test
- The teacher thinks I was not doing my best
- The teacher thinks I won't ever achieve very much so I just have to try to do my best.

Stacey didn't tell me whether Mrs Clarkson expressed her intentions for Matt in the same way, but her tone clearly indicated that such a statement was reserved for those who have disappointed her. So Stacey reveals how the teacher uses language to strengthen the children's positions with in the group, and by this I am not talking about physical positions but intellectual, and therefore cultural and social positions.

In the extract above the sister's scaremongering stories are seen to further compound Stacey's feelings of unacceptability and of low self-esteem. In this way her sister

maintains her position in the family, a position of dominance over her sister, made possible in part by this kind of emotional violence. This tension between the siblings is a consistent theme throughout her narrative and although some of it is portrayed as being quite unpleasant, other interactions reflect more typical sibling rivalries.

Immediately following the above transcript Stacey articulated how the two sisters have to compete for their mum's time. This was due in part to the long shifts that mum worked in her old job, sometimes not getting home until eight in the evening. The kinds of work that Stacey's mum could get, with her limited educational qualifications, was limited, highlighting another process whereby her social milieu structured her life. The impact of this being that Stacey would often speak of the cool response that she got from her exhausted mum. So it is that the economic conditions resulting from low educational achievement has completed a cycle whereby Stacey has reduced support in her schooling and will probably not attain higher GCSE grades. The need for acceptance is an important aspect of Stacey's life experience as often her behaviour in school suggested that she was appealing for attention, a disposition that I was very much aware of as a classroom researcher. Consequently my meeting with mum was helpful in exploring the relationships within this family.

We sat in the small living room, the other ground floor room being the kitchen/diner, whilst mum finished off the ironing. This was somehow reminiscent of the Rod Stewart incident. There was no sensible reason why she should have stopped ironing to talk with me, but the decision to continue was interesting. This was surely due to the necessity of having to get the jobs done as a single mother with two daughters. On the

other hand, this behaviour was very informal, as was her general demeanour toward me, and her use of language. There was certainly no indication that she found the situation at all threatening, or felt the need to behave in any particular way. In fact she was very blunt and 'earthy', and I inferred that her language, appearance and dispositions had been structured by her lower SES background. After a few minutes she informed me that she "did crap at school" and we proceeded to talk about this in more detail:

Stacey's mum:	My school? I went to quite a few schools cause my parents separated. I went to primary school. I went to two, one was a church school and one wasn't...failed my 11+. Then I went to Looe Comprehensive, could have been Liskeard...Saltash Comprehensive...so I've been to a fair few schools and ...I never went to school at all in my last year.
Andy	Really, and did you get away with that?
Mum	Yeah, cause I moved up from Cornwall in year 4 and then year 5 went to...was it Mundella... to go and see if they had the options and they didn't have the options and the school turned round to me and said you either come to the school now and do whatever, wherever we've got places for or you go back to Cornwall and finish off your education...and that was it. I never went to school again. So I never had a leaving certificate, never took an exam.

In the light of her decision not to complete her formal schooling, the school-refusal of her oldest daughter, Laura, was shown to have a familial root.

Despite having dropped out of school she had managed to get work and bring up her children in a relatively stable environment. This historical account was one of rejection by the system, of not fitting in and of the messiness of moving between schools. She

proceeded to describe how she "bludgeons" her way through the mathematical components of her job, and how she has recently had further opportunities to study again but did not complete the course because of family illness. Her family situation meant that there was not enough support available to enable her to fulfil her role as carer as well as completing these courses.

Even though Stacey's mum recognised the negative impact of instability on her own learning, addressing this issue in isolation has evidently not had a transformative effect on her children's success in school. As I described above there are the contributory factors of language and style, as well as the amount and kinds of support that she gives to her children. Cultural reproduction is not simply one part of their family life it is everything that happens in the family.

She proceeded to emphasise the importance she has placed on family stability:

> Mum: Laura and Stacey have both stayed in this one house, been to the one school and I just want them to have a calm growing up. Do you know what I mean? I want them to be in one place.... Laura's a little shit...a big shit.

This latter description in a recorded interview took me by surprise, highlighting how my own habitus can influence my research. My response was the subjective response of someone who grew up in a home where no-one used such expletives and who now, as a father, would not consider their use to describe his children. However, at the risk of sounding overly moralistic, I should emphasise that this is due more to my habitus than any conscious choice. Using such terms would be beyond the regulatory limits of my habitus. Extending this reflection further I have personal friends, from working class origins, with whom I now apparently share similar values (and yet clearly not in all

areas), who would sometimes describe their children as "little shits". So, although the influence of social status is similar in those two family situations, both having what might broadly be described as working class origins, what is surprising is not the use of the term *per se*, but its usage in this context. My socially-positioned discomfort resulted more from the mum's willingness to describe Laura as a 'big shit' to a complete stranger. Having said that, I understood what she meant and in that sense she made her case very effectively.

That incident had something in common with the Rod Stewart incident earlier. It was not that I was surprised at all that Stacey's mum should choose to go the concert rather than talk to me but rather the way in which she didn't inform me. That was what surprised me, that her 'rules of the game' were very different from my own. I proceeded to ask her about what she meant by her description of her eldest daughter:

Andy	In what way?
Mum	She doesn't go to school. She bunks off all the time. I have so many problems. And I think it will most probably rub off on Stacey, the way Laura is. Cause Laura's got the ability but she doesn't sit there. I know she can do it but she just won't.

This was a clear example of how family patterns of behaviour can reproduce themselves from one generation to the next, but this went unnoticed by mum. When I asked Stacey's mum whether she thought that there might be anything in my observation that her pattern of school attendance had some similarities with Laura's, she really didn't see what I was getting at. Her perspective was that despite her efforts to create a different experience for her children they were somehow being drawn into a similar spiral of non-attendance and underachievement.

Another aspect of reproduction indicated by this excerpt is mum's acknowledgement that "I have so many problems". The negative undertones of an invisible oppression seen here are reproduced in Stacey's dispositions as we have seen, but also more precisely. Stacey explained that "my friends at school...I do have problems making them" and in reflecting on how she understood the video camera she described it as "my mum that was zipped up and couldn't speak, so she knew my problems". Talk of having problems is a family trait, and more generally a trait originating in the family's social background. What is also interesting here is the sense of isolation and helpless inevitability about such problems. In addition Stacey reminds us of the fact that she feels that mum doesn't listen, or show concern for the things that worry her.

Stacey was lacking in confidence in both her academic work and relationships. She had few long-term friendships with other children in the year six class and would often list off most of the girls in her class as friends. Stacey's mum thought that her older sister might have exacerbated her younger daughter's lack of confidence:

> Mum Stacey lacks confidence I believe...and I think that is sometimes down to having an older sister... Laura is always 'calling' Stacey, so she has less confidence so she thinks that she's not very good which is a bit like me in a way. So I hope that she does better than I did...I really do for her sake.

Again the process of family enculturation was oversimplified. Rather than the sister having a dominant effect, Stacey's lack of confidence was rooted in mum's own feelings of failure, expressed partly in her use of language. Her mum admitted that Stacey's low self-esteem was related to her own. She described Stacey as helpful and polite but "very much a loner", not having many friends. That might have been the reason why she was so good at chess, suggested her mother, adding her disappointment that the secondary

school does not have a chess club. She did not seem to be taking any initiative in encouraging this interest in chess, but rather the responsibility lay with the school. However, putting her trust in the school system alone, a system which clearly advantages those who don't rely solely on it, is a strategy which will only confirm Stacey's marginalisation by that system. Stacey's mum had a lot of concerns about the school move and shared with the other parents anxiety about letting go, losing touch and not knowing what was happening at 'the big school'. Unlike the mothers of Matt and Toby, who with their knowledge of the education system will provide 'strategic' support (Hatcher, 1998) for their children, Stacey's mum simply defers to the system.

This family backdrop was helpful when trying to understand Stacey's classroom dispositions. She was often one of the first into her year six classroom and always wanted to interact with the teacher. She was nervous about getting things wrong, had seemingly very weak and unstable relationships with her peers and craved the attention of any adults who might be present. She talked on a number of occasions about being bullied and this was one of her concerns about moving schools.

Andy What do you think will happen when you go to (the secondary school)? Do you think that will be difficult in terms of making new friends?

Stacey Very...'cause my sister said, this was when she was in a good mood, you better get on with the like...er...the top kids in the class. So if you get bullied at school, if your next to the top kids no-one will like bully you...so...but my sister won't look after me when I'm in (the secondary school) because erm...she wants to be hanging around with her own friends

The theme of bullying fitted with Stacey's low self-esteem and difficulty in retaining friendships and perhaps her feeling of being bottom of the pile ('dumbest kid in the

class'). These difficulties were compounded by the tension with her sister and the way in which we see practical knowledge passing between the two of them. Stacey learnt that not only would it be difficult to make friends in the secondary school, something which was already an issue in the stabile environment of the primary school, but that power, influence and protection is associated with "the top kids" in the class. Who these children are is not made explicit but the ranking suggests high-attainers and at the same time there is an implicit assumption that Stacey will not be 'at the top' and that she will need the protection of "the top kids". Here again is expressed that understanding that somehow "the top kids" get an easier ride and are protected from bullying. Of course this is patently untrue for all children but these sisters clearly have an understanding that this is generally the case. However, Laura's idea of being "next to" those kids is unrealistic as the system is functioning to construct social hierarchies rather than level them. Bourdieu,

> ...throws doubt on the belief that bringing together in the same physical space agents who are far apart in the social space might, in itself, bring them closer socially: in fact, socially distanced people find nothing more intolerable than physical proximity. (Bourdieu, 1999, p. 128)

The advice from Laura contradicts the process of dispositional harmonisation whereby Stacey is likely to find, and be found by, other children from similar backgrounds who have similar 'problems' to her. In other words, although there may be an early attempt to befriend "the top kids", this strategy is unlikely to be sustainable in the long term.

The need for attention shaped the way that Stacey made her diary entries. She very much took the camera to be her confidant, almost her counsellor: "you're the only one I can talk to". This relationship developed during the time and the earlier methodological

discussion (Section 5.6) examines her changing perceptions of where I was in relationship to the camera and to her. Much of the attention that she received from the teacher was not the kind she craved: she received a considerable amount of 'telling-off' from the teacher for fiddling, playing with her pencil case, chatting and other minor misdemeanours.

Stacey was one of a small group of children who had been identified as needing extra support in her mathematics in the run up to the KS2 national tests. The teacher explained that "there's no way that they [a small group of children including Stacey] are going to get level four". Consequently they were in effect denied access to aspects of the class work. However, Stacey was in the classroom for much of the maths lessons that I observed each week. Her lack of confidence was clear in the early part of the lesson when the teacher often used interactive whole-class methods including number cards or white boards. Stacey would often watch other children intently as they scribbled their answers to questions and would then surreptitiously copy them. On other occasions she moved number cards around as they were held up making it difficult to see the numbers. She appeared to use a range of strategies for avoiding the embarrassment of being found to have the wrong solution to a problem. This mathematical anxiety was understood to be a familial condition:

Andy	So Laura's good at art but you don't know what else she's good at. Is there anything that she doesn't like doing?
Stacey	Maths (giggles), it runs in the family!
Andy	It runs in the family, why, who else doesn't like maths?
Stacey	Mum. Dad's okay. Well I don't live with my dad but I see him sometimes.
Andy	So how do you know that your mum doesn't like maths?

Stacey	I asked her to help with my maths. I did some maths and I got all of them wrong and I told her
Andy	And what did she say?
Stacey	It's your work, you should do 'em.
Andy	Do you think that she couldn't do them either?
Stacey	I think she couldn't

Whether or not Stacey's conclusion regarding her mum's mathematical ability was accurate, the effect was the same, Stacey lacked confidence and since she clearly thought (along with her peers) that the teacher's favourite subject was mathematics, she had a problem. On some occasions she was given alternative work to do because she had not understood the previous lesson. So rather than being kept together with the rest of the all-ability class she got left largely to her own devices. Having said that, she did present her work well, whether she had understood it and got it correct or not.

Her mum's response to Stacey's request for help could have been to do with her mathematical ability, as was Stacey's interpretation here, but the impact of this response is also to leave her unaware of what Stacey is doing and whether or not she can complete it successfully. Maybe she expects Stacey to take a lot of responsibility with her schoolwork, unlike some of the other parents who are much more hands-on in supporting their children with this. The effect for Stacey is to allow her to drift towards the disaffected position of her older sister. Lord, Eccles, *et al.* report US studies of the transfer to junior high that indicate that "the most salient predictors of self-esteem change are the adolescents' math ability, physical attractiveness, and peer social skill self-concepts" (Lord, Eccles, and McCarthy, 1994, p. 189). Admittedly the context is different but Stacey does not score too highly on any of these areas and so by their

reckoning should be expected to struggle at the transfer. What that research does not explain is the way in which these three important 'predictors' are themselves socially constructed.

Stacey: a pre-transfer sketch

Stacey is influenced considerably by peer culture in a way that tends to marginalise her from the peer group. This effect is made stronger by the link through her sister, to aspects of teenage peer culture. Moreover, the subculture in which her sister is immersed is evidently antagonistic to school and this is already having an effect on Stacey's learning dispositions. It also seems that Stacey's family has a rather weak effect on her in one sense, with regards to (her mum's) strategic support for her schooling and more general development. Mum takes little direct responsibility for supporting Stacey with her homework or in her new hobby of chess. Whereas the parents of Stacey's middle-class peers actively support their children's social and intellectual development through the provision of resources, transportation to clubs and activities and through time spent in discussion and giving encouragement, Stacey's mum seemingly leaves Stacey to get on with it.

If this is a weak effect then one of the strong effects of the family socialisation is the use of language, which is so taken for granted and subtle. I have presented a number of examples that show how Stacey's use of language is framed by her social context and positions her in relation to her peers. Moreover, Stacey shows some awareness of the language of school and was able to interpret the implicit social cues in phrases like "I just want the best for you".

This and other family generated dispositional strategies are taking effect and the same isolation that her mum experienced as a result of her nomadic upbringing is now a part of Stacey's experience. At the same time this isolation is being experienced in her peer group and she is becoming marginalised, developing dispositions that show an associated disaffection towards school and mathematics. Other influences of this peer

culture are seen through her own awareness of her "class body" and her well-worn clothes. There is an overlap between the conforming influence of the peer culture and that of school, for school is the place where she has most interaction with the peer group. Her marginalisation from this peer group impacts her self-image, which includes her identity as a learner. In addition, she craves the attention and affirmation of the teacher but her efforts simply serve to confirm her inadequacy; not only is she not like Matt, but she cannot do mathematics: the teacher's favourite subject. She is gradually being structured out of the school system.

There is a clear interaction between these two fields and the way that she is being positioned increasingly in a marginal way by the reproduced dispositions of the family. Her mother and older sister have both been school refusers and Stacey is fully aware of a wider subgroup of children who adopt such antagonistic positions to school. It seems that Stacey is developing, as a part of that, a negative view of mathematics although she describes this as being inherited, genetically rather than socially. Stacey's family context leaves her looking for adult affirmation elsewhere, whether that is from the teaching staff or the video camera ('the only one I can talk to').

Each of the three fields exacerbates the marginalising influence of the others and the impression from the end of her time in primary school is that Stacey will have considerable difficulties adjusting to the new school context. She does not seem to be able to cope with the dominant demands of the peer culture and knows that she does not fit in the mainstream school culture. Therefore, it seems that there is a strong likelihood that she will follow a similar route to her sister, and her mum. This is not through imitation as such but through the complex interactions of the various social

fields that act so as to position her, and the dispositions of her habitus that have been acquired in, and tend to reproduce, that family context.

6.3 TOBY

Two estate cars sat on the wide driveway of Toby's house when I first went to interview his parents and I recognised a number of the plants in the garden as being things that I had recently planted in my own. Their large house was carefully maintained and the gardens appeared to have been landscaped. The inside of the house was no less well presented. I was ushered by both parents into a large kitchen/breakfast room (with about the same area as the whole of the ground floor at Stacey's) to talk with mum and dad. Toby was the only one of the children in this study who lived at home with both natural parents. The décor and furnishings in the spacious house were all very tasteful and everything was well presented and tidy. My use of 'tasteful' and 'well presented' here, as well as the reference to planting above, indicate that from this first encounter I was aware that in some sense these were my kind of people, i.e. a family probably having similar cultural resources to me. Unsurprisingly, this was precisely the kind of situation I had expected for all of these interviews, contrasting sharply with Stacey's mum continuing the ironing.

One of Toby's teachers described his upright posture, 'proper' speech and his appearance as being like "a little Victorian boy". Throughout his time in year six he was always immaculately presented, that is, in full compliance with the uniform policy of the school, although he did sport a rather 'square', outdated, hair cut.

> Even minor signs of social status such as 'correct' dress and bearing and the style of speech and accent are minor class signs and - again most often without their knowledge - help to shape the judgement of their teachers (Bourdieu, 1974, p. 39)

Toby explained that "I used to mess my hair up before I saw my mates so they wouldn't laugh at my hair 'cause I used to have a 1970's Beatles hair cut". Evidently he didn't do that at home but rather submitted to the expectations and values of the family whilst acknowledging the tension between that influence and the demands made on him implicitly by his peers. That he should have such a manner and style of dress was understandable when seeing his home and meeting his parents. There was an air of well-educated traditionalism about the family that could be seen in the 'sensible' clothes, the 'safe' Volvo, the unfashionable haircut, and so on. These dispositions sat in opposition to the vagaries of fashion and trend, and felt alarmingly familiar, which is unsurprising as it was this family context that was most like my own.

Toby's father was a manager in an IT company, having read Physics at Warwick University, which was followed by the completion of a PhD. He then completed a PGCE course and taught for two years in an urban comprehensive school before making the move into business. Toby's mother had also been a schoolteacher, at primary level, for a number of years but stopped when Toby's older sister was born. I had met both of Toby's older siblings before I began this research. The sister, five years Toby's senior was outstandingly able and well known in the secondary school for her academic prowess, diligence and quiet manner. However, she had recently been suffering from an eating disorder, which had taken its toll on the family and Toby's mother believed that this had adversely affected Toby. The older brother, aged roughly mid-way between the oldest and youngest child, was also known to be capable of high attainment but had a reputation for being rather lazy and silly.

When I first met Toby I was chatting to his table about what they thought of the mathematics they were doing. His response was to ask me whether I knew his sister. I had given the sister some support with GCSE mathematics coursework, which she had been doing impressively well with. Consequently I made an assumption that he might be good at mathematics or at least might be expected to be:

Andy Do people expect you to be good at maths because your sister is?

Toby No not really...apart from my Dad, he wants me to do well.

This instance of Dad's influence upon his mathematics is one of many, and their overall effect is not positive. Toby nearly always described his Mum as the support, the one he would talk to about difficulties, the one he would confess to. Dad, on the other hand, whether intentional or not, exerted considerable pressure on Toby, or at least that is the way that he describes it.

[diary entry] My Dad always says I need to get better cause I do struggle a bit - he makes me do extra long division or fractions

[Follow-up interview]

Toby Well I was quite good at division...in year 5 he (Dad) used to make me do long division every day so I could do it really easily. Then we didn't do it so I've forgotten about it and now we've started it again.

Andy What about enjoying maths? [He had previously said that he was enjoying doing maths]

Toby Well that's changed but I think that's because that was easier and this is harder.

Andy So are you the kind of person who likes a challenge or do you like it when its easier?

Toby I like it when it's easier 'cause you get it all right. My Dad always says when he takes me to school "make sure you finish all your work".

Andy You've taken some stuff home 'cause you haven't finished it. Did your Dad find out about that?

Toby No, because he was born, like, years ago! That's really skank...because my Mum always helps me with my homework if I'm stuck and my Dad doesn't so he always does it the old-fashioned way and I don't understand it so he always says he'll take five minutes but it ends up taking five hours.

Dad clearly has the interest in mathematics whilst his mum is open about the fact that she "hated" maths. However, his dad's interest is something that has increased Toby's negative feelings about the subject. This is partly as a result of the fact that his mathematical failures are exposed and that his dad's high expectations are often not met. Toby could not comprehend how his dad might want to do mathematics "for fun"!

Toby Sometimes my dad asks me what I've been doing. I sometimes lie really because I don't want him to do extra maths. I say "Dad, we do maths every day" and he says "come and please do some extra maths please" and I'm like "no way!" But he hasn't made me do any extra maths for a while.

Andy Is your dad good at maths?

Toby Yeah

Andy What does he do...what's his job

Toby He works on computers. He's just got a new job 'cause he didn't have a job for a couple of months...yeah, but I don't know why he's doing this 'cause if it was me I'd stop straight away, but he's just doing maths for fun...and I'm like "what are you doing that for?" and he's like "'cause I like maths".

Andy He does maths for fun at home by himself? Like what?

Toby He does really hard ones like y times x and stuff, and I ask about it and then regret that I ever asked.

The impact of his dad's interest does not appear to have had a positive effect on Toby's attitude to, or achievement in mathematics. Rather, Toby contrasted his dad's methods ('old-fashioned') with those he was being taught at school and hints at his father's expectation that he completed, presumably correctly, the work set (see previous transcript). Toby considered doing extra maths at home to be a kind of chore, something that he would lie to get out of. Toby's dad knows the significance of mathematics in ensuring access to opportunities. School mathematics is used as a 'social filter' (Davis, 1993, p. 90), and the economically and culturally rich parent who wants to enable his children's futures to be like his own, needs to ensure their mathematical competence. So for Toby and his dad, maths is *the* high stakes subject and Toby can expect relentless 'support' throughout his schooling if he looks like failing to make the required grade, whatever his dad considers that to be. As Bourdieu explains,

> Often with a psychological brutality that nothing can attenuate, the school institution lays down its final judgements and its verdicts, from which there is no appeal, ranking all students in a unique hierarchy of all forms of excellence, nowadays dominated by a single discipline, mathematics. (Bourdieu, 1998b, p. 28)

Toby's family had more economic and cultural capital than any other family in the study. They were fully in support of the comprehensive schooling system, both as professionals and as parents. In addition Toby was the only child who lived with a parent who was very positively disposed to the learning of mathematics. Yet despite of all this, his attitudes to school and to mathematics were not positive. This had something to do with the feeling, hinted at above, that he was not meeting his father's expectations.

The repetitive nature of the school mathematics curriculum was a source of frustration for Toby. He found mathematical concepts difficult but had to repeat the same annual cycles of frustration and failure. These negative perspectives were strengthened by the knowledge that his two older siblings had both been very successful. Consequently, he carried a burden of responsibility to achieve highly, both from the teachers and from his parents. One of the ways he diffused this pressure was through humour, often inviting his peers to laugh at his offbeat jokes and silly antics. Woods (1976; 1990) has described the strategic nature of such behaviour and how it is aimed at,

> ...transforming the reality of school from something they find tedious, irrelevant and perhaps oppressive, to something more light-hearted and tolerable that they initiate and control. (Woods, 1990, p. 209)

Toby was often ambivalent about the value of school and this had a considerable impact upon his mathematics. He was aware that both of his siblings had been more successful in school than him and this surfaced regularly in his narrative. For example:

> At the moment I want to do quite well because, erm, I let my mum, my brother, my sister and my dad down by getting spellings wrong because my brother and sister got all of their spellings right in year 6 which is over about 1000 spellings...they got them all right week after week 'cause they learnt them. I'm not happy 'cause I've felt that I've let every one down but last week I did get 20 out of 20 and I'm hoping to get that again this week.

The phrase "I've let everyone down" probably did not originate with Toby, but was more likely to have originated in the home. This is supported by his assertion that both siblings got all of their spellings correct, which is something that must have been passed on, either from his siblings or parents. Toby has been lead to believe, whether intentional or not, that he is underachieving by comparison. In many areas he lacked

confidence in the classroom and so the current emphasis on whole class interactive teaching in mathematics lessons tended to make him anxious. This was clearly seen in his responses to whole class interactive teaching.

His response to the tension resulting from high expectations from home, coupled with his sense of personal mathematical mediocrity, was to act as the 'clown'. Again Woods postulates that, "the battle for identities in schools is fought with humour as weapons" (1990, p. 199). He was the joker on the table and so was regularly seen to be off task, and this often involved Matt and the other boy on the table, both of whom had considerable mathematical ability. During the early part of the final year in primary school he would regularly describe these two boys as his closest friends. However, his propensity for joking and fooling around caused some tension between them and brought him into conflict with the teacher on several occasions:

Toby	Well now I like get sent to different tables about three times a week because of Stewart Wain and I find that really annoying. He's always mucking around and distracting me from my work and he always gets me into trouble.
Andy	Do other people on your table get moved?
Toby	No.
Andy	So why do you think that it's just you?
Toby	He makes everyone else laugh as well but they all manage to get away with it. It's cause Miss hates me!
Andy	She hates you?
Toby	Well I don't know but I don't like her cause she's annoying. I do like her but she like tells me off for stuff that I didn't do...I feel really annoyed about that 'cause she keeps saying that she's going to get my Mum and stuff...

Here is seen further tension ("Miss hates me"/ "well I don't know", apparent false accusations) and the threat of his mum's involvement. The teacher can threaten to involve Toby's mum as she knows that there exists much harmony between the values and priorities of his family and of the school. Mrs Clarkson is confident that such action will have a positive effect on Toby, because of the proven ability of this family to get the children to conform to shared family and school values. This would not be the case with Stacey or Marie (see below), in respect to harmony between school and family cultures.

Whilst considering this reinforcement of school by family and family by school, I want consider further Toby's tendency to 'act the fool'. He knew that he was not attaining very highly in comparison to his peers and his family habitus 'tells' him that he should be successful relative to others. If he cannot achieve this sense of success through academic attainment, like every other member of his family, he must resort to another means of securing his place in the peer group. However, the structuring effect of the family has hit a snag – Toby isn't that "bright" (mum's view) – and Toby's response is to resist the experience of relative failure with disengagement and humour.

Toby has not always found school or learning mathematics easy. In year five he was in the booster group for mathematics, another instance when "I let my mum down a bit...my brother and sister never needed it". Yet despite this sense of struggle with the subject he inexplicably describes liking mathematics on a number of occasions. This was not reflected in his classroom dispositions and so it would seem that his professed liking of the subject was more to do with what he feels he should say, partly his playing

my research game and partly his knowledge that the family values mathematical success. On many occasions, when the teacher was asking questions to the whole group, Toby seemed to be trying to avoid her gaze and, rather like Stacey, he would look around to check other people's answers before holding up his own number cards or whiteboard. The difference between him and Stacey was that he was much more careful in making sure that his peers didn't see him doing it.

As the year progressed Toby received minor reprimands for being 'off task', unsettled or silly during the lessons. His mum talked to the teacher, as she was concerned that the situation with Toby's sister was having an adverse effect on her two boys. Toby's mum knew the teacher well and was not hesitant in talking to her about the family situation. The teacher had taught both of the older siblings but the extent to which she responded to Toby in the light of her experiences with them is difficult to ascertain. His break times were regularly threatened and on one occasion he informed me that he should be working neatly but that he just cannot be bothered. The year six teacher expressed the opinion that he might struggle with the move to secondary school:

> I think Toby could easily...dip out. I think that if he sticks with people who work and works he'll be alright but he's not got much confidence and he's got low self esteem and I think those children are the ones that are easily lead. He doesn't have a very high opinion of himself and those are the people who are confident and will do well.

What she means by people "who work" is unclear but she might well be referring to those children who work in the way that she, and Toby's family, expects him to work. In other words, this expressed concern is principally about whom he socialises with. Through all of this it is unclear what is having the greatest effect on Toby's sense of

disaffection – the school or his family, or indeed something/one else. The third option is of course to hold Toby responsible because it is he who "can't be bothered". However, he has arrived at that position because of a hidden symbolic violence that he experiences at home, and at school, by virtue of the harmony between those field effects, and his failure to meet their expectations. This violence is the social force exerted by the school and the family upon Toby in order to constrain him to a trajectory that will maintain his social position. Often in Bourdieuan sociology, powerful people maintain their dominance and the subordination of others through various forms of symbolic violence. It might, for example, be seen in the way that academics generate an obfuscated discourse to maintain their status in certain arenas of knowledge production. In Toby's case, the violence surfaces in the sentiment that he has let his family down, that he fails to meet his dad's expectations, that he will fall short of his sister's achievements, and so on. So in Toby's case *violence*, intended to conform him to the family position, is veiled in language purporting to be encouraging. His response to that is mild resistance through continued lack of effort and an increasingly 'can't be bothered' rhetoric.

That Toby had such a problem with his self-esteem when he apparently had such a supportive family was interesting. His parents had a clear educational philosophy, which of course they could articulate clearly. This is centred around the notion of *learning to learn* and *doing your best* and is set against the centralised curriculum and assessment regime currently dominating the educational landscape:

Andy So what is important about school?

Dad What's important about school I think is...I think there's a social sort of aspect to it which is really important and I think you know that the things that you've got to...you've got to learn certain fundamental things like reading writing and arithmetic. You've got to learn those or you can't really move on in life and you've got to learn how to learn...

Mum Yeah, I sort of think that there's more to learning than just learning for a job. You know you can find out about art or music then you know you get enjoyment out of that...you know, find out about different paintings or artists ...and you know. So when you go off on holiday or when you're away and you go to museums you get a lot more out of it than if you knew nothing...

These opinions reflect the considerable cultural capital that is present within the family: art, museums, music, variety of cultural experience. The family has a key role in the broader education of Toby but both parents seemed keen to support the schooling process. Early in the dad's response he describes the 'fundamentals': reading, writing and arithmetic, and it these areas where Toby knows he is underachieving compared to his siblings, and thereby probably falling short of his parents' expectations. His mum recognised the same lack of confidence in Toby that had been expressed by his teacher:

Mum When I do anything with him at home, he picks things up fairly quickly and I think he's got it, but he seems a bit tentative you know. He seems a bit worried about it. He's frightened of failing and sometimes he needs lots of reinforcing, he needs to keep doing it and then to approach it again a few weeks later and have a go.

Why is he frightened of failing? Surely doing his best but still not understanding is acceptable, within the family learning ethos, unless of course there are hidden unspoken rules around the notion of doing one's best. Toby's dad continued:

Dad If I'm doing any with him I have a tendency that when he's done a couple in a particular way and got them right then I think I will try something a bit more tricky and then that's always a mistake.

This concords with Toby's earlier description of how his dad supports his learning of mathematics. Whether he means it would always be a mistake to work in this way, or simply a mistake to do this with Toby is unclear, but it is apparent that this approach has resulted in difficulties for Toby. So there were tensions within the family. Mum and dad supported Toby's learning in quite different ways and although they said that they were happy if he did his best it also seemed that his best would not be satisfactory if it meant he was a low-attainer. It was as if the statement 'we are happy with how you are doing as long as you are doing your best' had an unspoken corollary: 'as long as you're up near the top of the group'! An example of this is seen in the comparison of Toby's spelling results with his siblings' perfect scores. Toby's mum refers to their expectations:

Mum He drifts off. Its quite difficult to pin him down to do something at times. He drifts off quite a bit or he's easily distracted and he's not naughty...I think the bottom line is that he's not as bright as the other two. Someone like James can do next to nothing at school and still get higher marks than most because he just is naturally bright. He picks things up very quickly and Toby wants to be like him in lots of ways, you know. He's his big hero and you know if he does the same amount of work as James he's going to be bottom of the class and you know that's how it's going to pan out, you know. ...we've never sort of hassled the kids about getting great results or whatever. I suppose that we sort of expect them to work reasonably hard at school but you know we're not hassling them all the time about it but at the same time we think that perhaps

> Toby is one who will need a little bit of pushing because he isn't going to...you know he perhaps isn't as bright and if we don't push a little bit you know he's not going to get the message. We don't want him to be top of the class. We don't want him to be working fourteen hours a day, you know, to get the best grades that he can possibly get, but you know at the same time if you don't reach a certain level you get to a point where you know you're so far behind...you've got no chance...

This is interesting in the light of what Toby has expressed regarding his parents' expectations that he succeeds. Moreover, the older sister was known to be a perfectionist who spent many hours on schoolwork at home so perhaps mum was referring to her working fourteen hours a day. There is a contradiction here, because how can Toby do his best, not working fourteen hours a day, if it takes that long to "get the best grades that he can possibly get"? Amongst all of this muddled language is hidden a high expectation of academic success and future socio-economic wellbeing.

Can we be any more precise about the "certain level" that is expected of Toby? It is a level that he clearly feels he is falling short of and, although unclear from the data, it is, as I have suggested, probably a relatively high level. Mum's ascription of natural brightness to Toby's brother and the suggestion that Toby is not as bright as his siblings are, seeks to explain away the socialised nature of Toby's attitudes to school, learning and mathematics as genetically determined. However, alongside this there is recognition that "pushing" might help to correct his apparent genetic intellectual deficit. The data rather shows how the influence of the family habitus has created considerable tension for Toby. Their high levels of cultural and economic capital require schooling success in order to perpetuate such 'wealth' to the next generation. If Toby is struggling

with the "fundamentals" and not reaching the "certain level" required for success (understood variously depending upon social position) there is potential for conflict. In fact, mum's warnings are much stronger than that, as Toby might get "so far behind...(that he has) no chance". 'No chance' of what? Getting a degree and a professional career? Becoming a well-rounded, fulfilled, active citizen? No, here the concern is about the failure to maintain the social position he currently has, through being unable to reproduce his family's cultural resources through the acquisition of the symbolic and cultural capital that exam success confers. Bourdieu describes how,

> Teachers are products of a system whose aim is to transmit an aristocratic culture, and are likely to adopt its values with greater ardour in proportion to the degree to which they owe it their academic and social success. (Bourdieu, 1974, p. 38)

Although Toby's relationship to his parents is not the same as a teacher-pupil relationship, the high expectations that they have implicitly placed upon him reflect the "greater ardour" of parents who have enjoyed considerable academic success in the education system. The 'values' here are not so much the commonly understood ethos and values of the school, but what Bourdieu considered to be the more fundamental, underlying sociological priority of cultural reproduction. What is clear from the analysis in the recent pages is that the language of Toby's parent is in fact far from clear. It veils considerable complexity about the family's values and expectations in a way that could leave the listener unaware of the struggles, risks and violence that are brought into play to ensure Toby's successfully reproduced future.

Toby's parents were concerned about him moving to the secondary school. Of course their concern was not so much that Toby would not cope with the move, but that he

would not cope in the kinds of groups that they hoped he would be in. Regarding bullying, the only concerns expressed by Toby were concerning his (real) name but this is not reflected in the parental concerns below.

Dad I think there are two things that worry him. One is like being bullied and the other is like the work.

Mum Yeah, whether he'll be able to cope. He said that last week.

Dad And yeah I've been talking to him about it and I think that at the end of the day I don't see him as somebody who is going to get bullied for lots of reasons because he's quite sociable and he's quite capable of looking after himself anyway and it's the people, the loners who get bullied the way I see it you know. He hangs around with a lot of other kids who play a lot of sport and so I don't think getting bullied is going to be an issue but when you go somewhere like that with all those great big kids it's a worry, I remember being worried when I was going to secondary school and I'm sure everyone's worried about it.

Mum Mrs Clarkson says they're all worried but he...he thinks he's the only one.

Dad I think you know with the academic side of things you know basically I've just said to him you know as long as you do your best that's good enough, we don't want you mucking around with your pals as long as you try. Whatever grades you come up with that's ok, erm, so yeah, what can you do really.

They talked about some difficulties that the older brother had when moving to the secondary school and how they had gone "straight to the top", to the head teacher, to have them sorted out. Earlier I reported on the relationship between Toby's mother and the class teacher and mum's willingness to contact school if she was concerned about something. The same confidence is seen here with them approaching not the form tutor,

or the head of year, but going straight to the head teacher. Hatcher (1998) describes how,

> Parental cultural capital enhances success probability through two mechanisms. One is knowledge about the education system, which facilitates strategic behaviour...The second mechanism is the more effective help that middle-class parents are able to give with their children's school work. (Hatcher, 1998, p. 10)

Although both of these strategies are clearly evident in this family, there are many more ways in which the intergenerational transmission of cultural capital benefits Toby and others in similar social positions (Bourdieu, 1973; 1989; Bourdieu and Saint-Martin, 1974). I have mentioned the linguistic advantages conferred by the culturally well-endowed:

> ...apart from a lexis and a syntax, each individual inherits from his milieu a certain attitude towards words and their use which prepares him, to a greater or lesser extent, for the scholastic games. (Bourdieu, 1974, p. 40)

Elsewhere I have included multiple references to manners, style, bodily dispositions etc. (Bourdieu, 1984). So although Hatcher's 'two mechanisms' are undoubtedly part of this panoply of strategic advantaging mechanisms they are really only a very small part. They are conscious whereas many of the other factors are not and it is this subconscious, hidden, intergenerational transmission of cultural capital that has the most powerful effect on the reproductive probabilities of the education system.

My interview with them finished with a discussion about the meanings of their children's unusual names. This is not a conversation I had with anyone else in the study with the exception of one of the secondary teachers, Mr Newcombe, which was also prompted by a discussion of Toby's real name. These conversations about names with

Toby's parents and Mr Newcombe suggest some dispositional similarity in this regard. So these discussions say as much about me as they do about these parents and the secondary school teacher, or rather they draw attention to some commonly held dispositions in our related value systems, themselves socially derived.

Toby: a pre-transfer sketch

Toby's position in the mainstream of peer culture will, according to his dad, offer him some protection from some of the turbulence of transfer. Unlike Stacey, who presumably fits Toby's dad's description of a 'loner' who is more likely to be bullied, Toby will probably manage the social dimensions of the transfer reasonably well. However, if he doesn't, we know that his parents are able to go 'straight to the top' to help him, and with their considerable capital, and insider knowledge, they have a fairly influential position in a system which is generally very good at keeping parents at a distance.

What is harder to predict is how the strongly structuring, influencing dispositions of his family, including the effects of his academically successful older siblings, will effect his move to the secondary school. Toby is already exhibiting some forms of resistance to the high expectations from his parents, and the wider family, even though those expectations are not always made explicit. For me, the interest lies in the strength of both school and family fields, the close harmony between their aims and methods and the resulting violence that Toby experiences. The harmony between the field effects in the arena of Toby's learning, means that the teacher can call upon Toby's mum to reinforce the school's message and, vice versa, *the schooling project in return is the system which is used to measure progress, position and future potential. For Toby, the pressure exerted by the concordant, structuring power of these two fields seems to be forcing him to resist through humour and disengagement. This strategy also helps to disguise his sense of falling short, or his mum's attribution of intellectual dullness, resulting in a kind of "I could do it, but I can't be bothered" attitude.*

Toby carries a lot of cultural capital in his conservative appearance and mannerisms, which are easily observable, and will be so in the new school. Before he arrives there, teachers who know of his siblings will probably have certain expectations concerning his academic work and potential. This could have a positive effect if Toby can respond to the high expectations of the teachers but conversely, failing to live up to such expectations might further confirm him as 'less bright' than his siblings, which could tend to further alienate him from the formal processes of schooling. Moreover this could confirm him as a family misfit, one so far behind that his 'chances' have gone. If this does happen then there would be potential for the peer culture to make a more significant and negative - from the family perspective - impact. His teacher's concern about him mixing with the 'wrong' sorts of child might prove to be correct. This would not be an accidental move but rather, by identifying himself with those children who don't work well (in the teacher's judgement), he would seek out other children who, for whatever reason need to resist the confidence-sapping expectations of families and the colluding school system. Of the four children in the study, Toby is the only one that is under such pressure to succeed. His family seems to be most concerned about loss of status for their child. For the other three families it just doesn't appear to be as high a priority. As the family, and so the child, with the greatest cultural resources, Toby has the most to lose. His is the riskiest position and this might be one of the reasons why it is his parents who exert the greatest pressure on him to succeed, albeit in often tacit, unintended ways.

School transfer is a risky time for Toby, when the relationship between home and school is weakened and the strong influences of family become increasingly exposed to the positioning power of peer culture and school fields. As his year six teacher points

out, it could go either way, depending upon how he positions himself, and is positioned, by his peers.

6.4 MATT

Matt's reputation as a highly able mathematician preceded him. By the time I first talked to him several children had informed me that he was the best at mathematics in the group. I asked his group whether it was the case that Matt was good at maths and there was a general chorus of agreement whilst Matt sat there and smiled in a rather embarrassed, bashful way. Matt was acknowledged by his peers to be the best in the class and did achieve a perfect score of 100% in the KS2 National Test at the end of that year. He was a mature, easygoing child, with a range of interests, both within school and without. As well as demonstrating considerable mathematical ability he was a star of the school football team. So when this was coupled with his likeable, easy manner, he was the choice friend of many of his classmates, as his mum explained.

Mum I think he's one of the brighter ones from what I gather from Mrs Clarkson but I think he's also a fairly popular kid. He had some trouble recently and it was due to him being popular. It sounds silly but a lot of children had gone away from another child because they wanted to be with Matt and that had caused a problem. I think he's fairly...what shall I say...he doesn't blow his own trumpet. I think he's fairly modest with it. I hope he is.

Here Matt's mum expresses her desire to see certain values develop in him. Notwithstanding his popularity his mum expressed some concern about the state of his friendships. He seemed to have many acquaintances but not many good friends and this was a concern for her when considering his move to secondary school. Matt was a thoughtful, caring child, and demonstrated considerable compassion for his peers who were struggling, whether academically or socially. This disposition was strongly influenced by his mother, who had worked in two 'caring' professions. This was exemplified in his talk about the transfer:

Andy When you go to [secondary school] who would you really like to have in your class?

Matt Firstly Toby and then Stewart Wain and then a boy in 6G called Michael Winter 'cause he struggles a bit but he gets on really well with me and I don't think that many people would stick around with him at [secondary school] but I will.

Andy Now you said that a quality that you recognise in your friends is trustworthiness and now you're talking about being committed to people that other people aren't that interested in. What makes you think in that way?

Matt Because it feels as if I'm doing something good and I feel sorry for him at times.

Eleven-year-old boys do not commonly express such attitudes, but Matt was unusual in that regard. He lived at home with mum, step-dad and two older brothers, but despite being third in the family like Toby, Matt had a far more serious, independent disposition than his friend. The family had recently moved to a large detached house, which needed some development. Consequently when I visited, the place was in a bit of a state; the large front 'garden' resembled a builder's yard.

Matt's dad ran a small motor component business and Matt saw him regularly, partly through the chess club that dad ran together with Matt's teacher. Matt was a good chess player. Matt's mum trained as a nurse but had more recently retrained as a primary school classroom assistant. She worked in one of the local primary schools and has considerable insight into the education system. She described Matt's mathematical ability as follows:

Matt's mum He's quite a thoughtful child. His abilities...he's quite a bright spark, but then all three of them are quite bright. I don't really know where it comes from but Matt has a knack for maths, he really does. He loves it. I don't know where that comes from. He's always done it, even as a little one, as a toddler

This idea of brightness, as describing those more intelligent or *enlightened*, was only used by the middle class parents, and teachers. Brightness is to be contrasted with dullness, but unsurprisingly Stacey's mum doesn't describe her as dull. This term, bright, is used to rank. It is more about relative brightness: in describing Matt as "quite bright" his mum is ranking him towards the upper end of the scale of the illumination.

She talked about how she used to talk about numbers on the doors of houses when Matt was still in a pushchair. I don't know how many parents do this with their children, but if this was an example of how she encouraged Matt to take an interest in numbers, then she clearly did have an early impact. The 'correct' use of language, and talk about ideas, are critical for success in the schooling system. Much of Bourdieu's critique of the socially reproducing education system is concerned with such subtle cultural forms of speech and thinking, as I have described elsewhere. Matt's mum doesn't consider herself to have done anything to encourage Matt's mathematical aptitude, but her description of a family discussion prior to my arrival does tell us something about the family effect on his learning dispositions:

Mum We were talking about it over dinner tonight actually...erm...to me algebra is working out unknown quantities. That's the way I see algebra, finding out what x is, and I think throughout your life yes you do use that and you have to work out things. They all disagreed with me. Well I was equating it to Steve [her partner] working out quantities for patios or what have you. Well you

> have to work out how much you need, slab-wise or concrete-wise or what have you so you get your area and you'd work out how much you'll need and that to me, x is the unknown quantity, that's how I perceive algebra I'm afraid. That's very basic. So I think yes you use that but as for logarithms and so on, a lot of it, no, I don't think you'll ever use it again and so I think what's the point. I mean, I've had Matt say... "I don't understand this"; "I don't know how to do it", and he'd say "well, why do I have to have to learn it?" and I'd say "I don't know why you'll have to learn it, 'cause you'll never use it again" [laughs]. "Unless, like your uncle Steven, you become an accountant and then maybe you will use it again", but a lot of it to me seems that it will be stuff that the kids will never use again.

Two things that are worthy of comment from this statement: firstly that they talk together as a family over an evening meal. This opportunity is made possible by the economic and working conditions in which Matt's mum currently find herself. This however, is not simply the good fortune of a middle-class parent who is able to work sociable hours (c.f. Stacey or Marie). Matt's mum used to be a nurse but stopped that some time ago. One of the reasons for her retraining as a classroom assistant and working in a local school was for precisely the reason that she could be around to support the children. So whilst still the case that this situation is dependent upon the financial stability that she has enjoyed there has also been a conscious decision to use that in a particular way to benefit the children. This is in effect the conversion of parental economic resources to ensure the maximal gain in the child's cultural resources as acquired through the schooling process.

In the above regard, there is a clear distinction between the children in the study: two of them have mothers who have oriented their working lives around their children. Two other mothers spend less time with their children as they have to work longer days or take two jobs. I consider it to be merely a coincidence that there is gender split here.

That Matt shares a meal in this way reflects something of a traditional family ethos that will later be recognised by his secondary school mathematics teacher. It is not the meal, *per se,* that is important here, but how that event points to the existence of strategic support processes that have been put in place to maximise the opportunities afforded by the schooling process. The talk about mathematics in the above extract was pre-empted by my visit but such conversation together as a family seems to happen regularly, and includes talk about the children's days at school. In addition the above narrative shows the willingness of Matt's mum to acknowledge that whilst there is mathematics (and other schoolwork) that will never be directly useful, some people do need to use, and need to be good at, mathematics.

It was apparent from watching Matt in the classroom that in relation to his peers he was very good at mathematics. He was confident orally and could think about problems in creative ways. He worked quickly and this demonstrated, according to his peers, his mathematical prowess. He enjoyed being given a challenge, a problem solving task where he had more freedom to explore and describe the mathematics. His cultural and linguistic capital reaped benefits here. On the occasions when he did get something incorrect, either orally or in written work he was somewhat embarrassed, but that didn't seem to deter him from trying again.

The Matt I saw at school was the one his mum described as the "grown up, mature, thoughtful version". He was not as well presented as Toby; wearing worn Nike trainers, Gola socks and well-worn school jumper but his behaviour in the classroom was always exemplary. His teacher thought very highly of him and this effect could be seen in her treatment of him during the lessons. This took effect in subtle ways concerning the level of responsibility he was accorded, the kinds of praise he received for his work, and so on. I highlighted earlier in Stacey's story how Carr and Kurtz-Costes' work (1994) indicated the usefulness of such verbal clues in building self confidence and positioning himself relative to others in the group. Mrs Clarkson talked positively about Matt's brothers and the quality of support that he received from his mum. However, being favoured by the teacher had associated disadvantages, such as having to cope with the jealousies of, and conflicts with, peers. Such annoyance sometimes became resentment and soured the relationships between Matt and his peers. One of Matt's classmates reported:

> Marie ...I like Matt as a friend but sometimes he does annoy me. Sometimes he does get pretty annoying because if Mrs Clarkson ever wants to do anything she always asks Matt to do it and its annoying

In the light of his mum's concern about his friendships, such favouring by the teacher can be seen to be a potential hazard to such friendships. Not only was it an issue for Marie, but as we saw earlier it was also a source of conflict for Stacey. However, this is a risk that Matt is prepared to take in order to secure the favour of the teacher, at the risk of alienating some of his peers. In this respect he takes an opposing stance to Marie, as I will show below. On the whole it was to Matt's advantage that there was already a well-established and positive relationship with the family but in addition this teacher really

enjoyed teaching mathematics, which happens to be Matt's favourite subject ("I do totally like maths"):

Matt Erm, yeah well, after my brother Tim having her, and he got on really well and I thought I was in for a treat when I came cause I thought it would be good cause my mum was pleased with Miss Clarkson. I do like Mrs Clarkson. She's an 'alright' kind of teacher. She'll be strict when she has to be. I get on with her cause she does chess and I do chess and yeah she's a good teacher. Sometimes she's strict but that doesn't bother me cause I know teachers can be erm, she does help well and teaches well.

Andy Do you think that there are any things that she particularly likes doing with you as a class? What do you think are her favourite subjects to teach?

Matt Her favourite subject is maths, I've heard her say that and I think that the other one she likes doing is science with us but that isn't my number one subject.

So Matt was already expecting to have a good time with this teacher before the year started and he seemed to have adopted his mother's positive attitude to Mrs Clarkson. Again this is the reverse of Stacey's experience. It wasn't a problem that the teacher was strict, as due to his own behaviour and attitudes he was not expecting to fall foul of her expectations. It helped that she was also the teacher who organised the chess club with Matt's dad. Matt enjoyed a good relationship with his dad but whereas his mum claimed that Matt's dad was not very strong mathematically, Matt considered his dad to be a support with his mathematics:

Andy So tell me, if your dad is good at playing chess do you think he's good at maths as well?

Matt Erm...yes he is good at maths...erm

Andy How do you know?

Matt He works out things and we have to work out like the miles on the distance to travel and things like that

Andy He sets you maths problems does he?

Matt Yeah sometimes he does yeah. Normally I can work them out but sometimes they're too hard.

So Matt talked about mathematics with his dad. This distance/time context is one that he spoke of when describing their school trip to Jodrell Bank. Matt always worked hard in lessons. He wanted to do things well and this was all part of his wanting to maintain a good reputation:

Matt (diary entry) I wouldn't talk about getting up to mischief...cause that could give me a bad reputation and I don't want that, I want a good reputation.

[follow-up interview]

Andy How important is that to you, that last statement?

Matt It is very important to me to have a good reputation. I don't want people to think of me in a bad way, I want them to think, like erm, I'm a good person, not bad. I don't get into trouble a lot, I get on well with them...I have good manners...and erm probably that's it really

Andy Would you include things that you can do in that good reputation?

Matt Yeah erm working well in class, erm doing well at football and chess and what's the other one...athletics, I'd like other people to know about that.

This notion of being a good person underpinned his desire to help people and befriend them. These values, including his good manners, were learned in the home and this idea of having a good reputation is a stronger disposition than his desire to have close friends. Having a good reputation equates with being 'reputed to be good at...' and provides a measure of self worth. This disposition enables him to value the opinion of the teacher highly as it is partly in these classroom contexts that he wants to have a good

reputation. In placing his emphasis on the opinion of the teacher, rather than his peers, he submits to the power of the school system to bolster his reputation. He is happy to play this game, and so submits to the school field's rules and intentions, being as they are in harmony with his own.

Matt's diary entries are very thoughtful and on several occasions he explores mathematical problems in fine detail. His initial relationship with the camera is also worthy of note. It was Matt of all of the children who took the camera to be a window to the world. He seemed to think that beyond the camera was an interested audience that he was "getting to know". This relationship to the camera changed but there was still talk of others involved apart from him and me. Expressions like "I'm going to tell you what Mr Noyes told me" and "I imagine that Mr Noyes watches this", suggest third parties rather than him conceiving of this as a direct, albeit delayed, communication from him to me. This idea that the world might be watching him fits with his desire to have a good reputation, and with his hint in his first diary entry that he felt famous, a feeling which evidently gave him a great degree of pleasure.

Matt: a pre-transfer sketch

For Matt, the influences of the three fields under study combine positively, more or less in reverse to the way in which they impacted upon Stacey. Matt is popular and contributes to the structure of the localised peer culture through being a friendly, 'intelligent', multi-'talented' child. This is partly made possible because of the values that he has acquired from his family. These same values and dispositions are associated with an excellent work ethic that helps him to conform to, and be further conformed by, the schooling system. This system has priorities and values that are very similar to those of his family and so he fits in well. This harmonisation of his dispositions with those valued by the school, and of his interests and skills with those valued by the peer culture, ensures him considerable success in all areas.

Unlike Toby, Matt does not appear to be under any family generated pressure to succeed, although such pressures would probably be more clearly exposed if he were not succeeding. However, the family habitus, with one of its core values being the development of a 'good' reputation, which includes a willingness to help others, is less critically reliant on maintaining academic position. Matt's mum nowhere echoes the concern of Toby's mum regarding him falling behind and having reduced chances. There is a more balanced perspective in Matt's family of what constitutes success. This is due in part to the less risky stakes that result from the lower levels of academic attainment and economic success in Matt's family.

The prospects for the move to the secondary school are accordingly very good. His priority will be to establish his reputation as a learner but because of his other skills (e.g. his footballing prowess) he will be able to smooth the transition within the 'informal culture'. This should protect him from some of the negative impact of social

repositioning in the new peer group. He is mathematically very strong and this includes oral confidence so he should be able to establish himself in that subject quickly. However, the concern raised by his mum concerning the stability of his relationships might be an issue, although this seems to not be Matt's highest priority. Moreover, he does not seem to be driven by a need to be accepted by certain peers or peer subgroups, which is the case for all three of the other children. Like Toby's family, he aspires to do well, but unlike Toby his classroom dispositions are much more positive. These, coupled with mathematical ability that is plainly evident in his talk, should enable his new teachers to pick him out as a high attaining and hard working pupil very easily. In that sense the pre-transfer data suggests that Matt is an 'ideal' pupil who fits well into the system and the school system fits well with him. The family and school structures confirm one another, arguably more closely than in Toby's case, and without the tension resulting from parental and self-imposed pressure, Matt's future is the most secure and predictable of the four children.

6.5 MARIE

During the first year of my study Marie moved from one inner city area to another inner city location. Both of these districts are associated with many of the challenges facing urban communities. Marie talked about the fighting, joy-riding and drug culture that she had seen or knew of; quite a different environment from the leafy suburb that she travelled to on the bus to school; the school that her mum went to. Marie lives at home with her mum and older sister in a garden-less terraced street near a busy main road into the city.

Marie's mum worked in a bank in the day and had to maintain a second job in the evening in order to meet the financial demands placed upon her as working mother and homeowner. Consequently, Marie did not see much of her mum, but then she also seldom spent time with her dad. One of his legacies was her interest in football, which, at aged eleven, she talked of pursuing as a career (or being a wrestler! Or a policewoman, "but most people I know hate the police"):

> Marie: ...because he wanted a boy but then I turned out to be a girl so what he did was every time Manchester United were playing on telly he used to sit me on his knee and make me watch it

Although Marie didn't see her dad much she did spend a lot of time with his mum (i.e. her grandmother), particularly in the light of Marie's own mum's working patterns. She may not have shared her mother's interest in horses but she assertively linked her personal enjoyment of doing mathematics with that of her mother. During one interview we explored this further. Marie's fragmented responses to questions, reflecting linguistic codes that Bernstein (1977) might have described as more

'restricted', made Marie more difficult to interview than her peers. However, such *restriction* (even such a term belies an academic's class position regarding the language of the lower classes) should not be equated with inferiority. One of Bernstein's contemporaries, Labov (1973) pointed out the implicit deficit model underpinning Bernstein's then current thesis, and caricatured his 'elaborated codes' as "turgid, redundant and empty" . Labov went on to point out that such elaboration is "simply an elaborated *style*, rather than a superior code or system" (Labov, 1973, p. 34). His rebuttal to Bernstein was well placed and was useful in critiquing other deficit models of disadvantaged children's language, themselves utilising Bernstein's framework. Taking a more Bourdieuan perspective on this leads to an acknowledgement that such differences in linguistic style can advantage and disadvantage children in formal school contexts, depending on whether they speak the cultural language of the school. Indeed, Bourdieu asserts that,

> language is the most important part of the cultural heritage because, as syntax, it provides a system of transposable mental postures which themselves completely reflect and dominate the whole of experience. (Bourdieu, 1974, p. 40)

What we learn from this is that if I, the researcher, was recognising a disjunction between my own classed-derived use of language and that of Marie, then there was every likelihood that this effect was also going to impact her learning trajectory, through the interpretations and strategic responses of her teachers.

Marie: Maths is my favourite subject and it's my mum's favourite subject too. It runs down the family a bit.

Andy: What do you mean, 'it runs down the family'?

Marie: Well 'cause most of the people that are in my family their favourite subject is maths.

Andy: How do you know?

Marie: I just ask them, I just ask people what their favourite subject is.

Andy: And they say maths?

Marie: Maths and science but I hate science

Andy: Why do you hate science?

Marie: Because it's too complicated.

Andy: And maths is not complicated?

Marie: No it's easy

Andy: Why do you think you find it easy?

Marie: Dunno...because I do it so much.

Andy: Because you practise?

Marie: Yeah and because I like it

[Later in the interview]

Andy: What do you mean I do maths at home?

Marie: I just mess about doing stuff. I get my mum to write me loads of maths questions on a sheet and I just do them

[later in interview]

Marie: ...Matt's probably the best at maths in some things and I'm probably second best.

Andy: And how do you know that Matt is the best?

Marie: Because usually he just writes it down so fast

This association of speed with ability was not unusual amongst the higher attaining members of the class. Nicholls (see also Covington, Spratt, and Omelich, 1980; 1978) described a transition in children's attribution of ability, somewhere between 10-12 years of age, from an association between ability and effort (which the children link to speed) to a recognition that effort cannot compensate for an apparent lack of ability.

Although Nicholls takes a psychological perspective that assumes intelligence to be largely genetically determined, rather than a sociological perspective that offers accounts for the social construction of ability, through for example IQ tests (Gillborn and Youdell, 2001), the effect in children's perceptions appears to be the same. It is interesting to note the timing of this attribution change, overlapping as it does the period of, and following, school transfer.

The above description of mum's involvement in supporting Marie's maths at home is qualitatively different from the discussion of problem solving approaches seen in some of the other family narratives. This is important, as there is a significant difference here between both the quantity and type of support given at home. I have already pointed out that Marie's mum is not available very much to offer this support to Marie and my data does not offer relative quantitative measures of the support in the various families. Writing out pages of questions emphasises repetition and practice over thinking skills. Compare this with Toby's mum and dad, who both offered support and his dad who could use alternative explanation. Matt's family discussed mathematical applications around the meal table (although this was arguably only prompted by my imminent visit). The other child in the group was Stacey, whose mum left her to get on with her own work. Whatever the impact of these various support strategies, interviews with Marie's mum confirmed her enjoyment of school mathematics:

Andy: You've said that maths was your favourite subject. Why? What was it about maths?

Marie's Mum: Erm...I don't know. English I found very boring. Maths was always taxing the brain. There was always something you'd got to think about.

Andy: What did you like doing?

Marie's Mum: Erm...most of maths. There was only one thing in maths that I didn't like doing and that was percentages. Everything else was pretty easy.

Marie's cultural capital resources differed from those of the other children in other areas of her education. When talking with Marie on the day that they had done "some work on planet music" it became clear that she had not really appreciated Holst's "Planets" Suite. Whilst none of the children might have known of this composition beforehand, Marie didn't seem to have the cultural resources, or interest, to make sense of this musical learning experience, although contemporary music was of great importance to her. Her peers did not mention this learning experience and they might have had a similar response. [What is perhaps equally as important here is that upon reflection I realised that I hadn't felt a need to explain this piece of music further, as I assumed that the reader would have similar cultural capital to me (and I have performed The Planets Suite with an orchestra)]. Wilkes explains that,

> ...in its artistic components, in eating habits, in the dispositions of the body, in theatre-visiting (or not theatre visiting), in a concern for music or no concern, in the political attitudes, the cars they drive, the men and women they marry, the sort of living rooms they construct - in all these ways the lives of classes are drawn. (Wilkes, 1990, p. 130)

The reference to musical 'concern' here as a simple binary is, of course, a gross oversimplification. Marie's sense of *taste* that is so central to her habitus leads to this seemingly natural yet strategic choice of music. This choice is not dependent on musical preference, although admittedly she was probably not accustomed to hearing classical music whilst at home, but on cultural preference and positioning, in order to identify with the peer subgroup who listen to 'garage'. So there is an element in this

choice whereby the cultural resources of the family limit her choice but within those limits she makes a choice to position herself. Bourdieu reminds us that "to exist within a social space, to occupy a point, or to be an individual within a space, is to differ, to be different" (Bourdieu, 1998b, p. 9). Marie was asserting her distinction from a cultural group that liked, or could gain some cultural benefit from, listening to classical music.

Regarding Marie's comments about the occurrence of mathematics in other life contexts she has very little to say. On the one occasion when we did talk about mathematics in out of school contexts, cooking with her Nan, she concluded that her Nan didn't actually use much maths because she knew the recipes and didn't weigh things out. This is quite different from the children in the study with greater cultural resources who were able to talk in more abstract ways about the mathematics. Such abstraction is really the playing of scholastic games whereby mathematics that has little actual use in the children's daily experience is constructed into descriptions of the world that have capital in educational settings.

In one respect Marie is quite different from her peers that form the cases in this research, she experiences a much greater amount of explicit conflict. Or perhaps it would be more correct to say that conflict is a more normal aspect of her day-to-day experience. Throughout year six Marie was regularly 'in trouble' with her teacher. She behaved badly when the class had a supply teacher and was subsequently reprimanded for her role in leading the class' antics. She described those incidents as follows:

Andy Now you got into trouble with her. Can you remember why?

Marie Erm...she did erm...Stewart was making noises and she was like just "get on!" without telling us what to do without giving us any work. I didn't do any work 'cause I didn't know what to do and I just sat there doing nothing...and she told me off and I don't know what I said but she sent me to the corner.

Andy You answered her back? Is that something that you do at home?

Marie Yeah

Andy And do you get into trouble?

Marie Yeah

Here my position is revealed in my interpretation of her response to this supply teacher: she 'answered back'. I could ask this question partly because I have seen her do this on other occasions, and get into trouble for it. Perhaps the tasks were meaningless or too difficult. Perhaps the instructions were unclear and Marie was reticent about asking for clarification. Evidently I did not pursue this but rather assumed that she was in the wrong. In that way I adopted a position on the nature of resistance and the appropriateness of that resistance in this classroom context. Furthermore, my 'meaning-making' position was informed by my own habitus, as teacher and as well-educated professional rather than by the resistance strategies of relatively disadvantaged groups. However, my point is that there is probably a high degree of harmony between my sense making of Marie's actions and those of the supply teacher and the teachers that would later work with Marie. Our conversation continued:

Andy So, why is that person different from Mrs Clarkson?

Marie 'Cause Mrs Clarkson tells the person off.

Andy Do you think that Mrs Clarkson is a fair teacher?

Marie Sort of. I wouldn't give her the thumbs up and I wouldn't give her the thumbs down.

Andy Why not?

Marie She can be ok sometimes but sometimes she just shouts.

Andy Do you think she likes you?

Marie Dunno. A bit.

Andy You know you said that Matt is a 'teacher's pet'. Would you like her to like you more? Is that important to you?

Marie Erm...not really.

Andy So you don't mind whether she thinks you're good or not.

Marie No.

Marie did not have any sense of having to please or stay on side with her teacher, unlike Matt, and this would later have implications for how these two children would respond to the move to the secondary school. She was not concerned for her good reputation amongst teachers but her reputation for being a tough, street-wise, football-playing girl was really important to her. Marie didn't appear to derive any self-worth from the classroom aspects of school, the traditional learning context of the classroom. She had no apparent interest in working hard to achieve highly and the values of the classroom often seemed to strike a discordant note with her approach to life. The one thing she did respond to was the opportunity to compete, and mathematics was one of the few classroom contexts that allowed her to do that.

Where Marie came into her own was in the hurly-burly of the playground, in the conflicts of playtime, where another school culture distinct from that of the classroom existed (Sluckin, 1987). There her strength of character, and physical presence, enabled her to dominate and maintain a sense of control over many other children, including the boys' games of football.

Marie was generally not very positive about school, which became apparent when one of our interviews was interrupted to inform Marie that she was no longer going to the dentist that afternoon.

Marie	(grumbles) I wanted to go to the dentist
Andy	Why?
Marie	'Cause I wanted to miss school.
Andy	Why do you want to miss school?
Marie	'Cause its boring.
Andy	Why is it boring? Is it the work, the people, the teachers?
Marie	Everything. Playtimes are boring except for dinner.
Andy	Do you think that it will be the same when you go to [secondary school] next year?
Marie	It will be better.
Andy	Why?
Marie	'Cause you get to choose out of loads of things to eat for dinner.
Andy	What about the lessons?
Marie	Lessons will be boring.
Andy	Do you not like learning?
Marie	Sometimes I do and sometimes I don't.
Andy	So what's the point of going to school?
Marie	To learn. I know that I've got to learn but I don't want to.
Andy	Why don't you want to?
Marie	It's boring. Learning cannot be fun...there's no such thing.
Andy	So, learning cannot be fun!
Marie	No unless your making stuff and getting messy.
Andy	So, tell me something that's fun.

Marie Playing with my friends, playing on my play station, watching telly.

Marie was in year six when she said these things. She had five years of compulsory schooling ahead of her. She had been in the same class as all of the other children in this study and she is adamant that "learning cannot be fun". The only thing that was worth looking forward to at the secondary school is the expanded range of lunch choices, which Galton, Comber *et al.* (2002) point out as a common attraction of the new school. This is not a very positive overall position to be in. Her acknowledgement, "I know I've got to learn", is a recognition of the power that the education system has over her – she is subject to its schemes but doesn't want to be. The kinds of things that she has to learn she does not find interesting, and the example of classical music lesson comes back into view. What Marie is bored with is being compelled to participate in a curriculum that she feels is not designed for her enjoyment. This is a much bigger issue and of course gets to the purposes of schooling itself. Suffice to say here that Marie is already experiencing tension between what the education system desires and what she values.

Early on in my time at the school I found her using her mobile phone under the desk. They were not allowed in the school but she informed me that it was a message from her mum, so either she condoned Marie breaking the school rules or Marie was lying. This is another example of Marie's resistance to the conforming power of school rules and their teacher enforcers. If Marie had not mislead me then she had a sense that to receive a message from mum was a condonable reason for breaking the school rules, i.e. family 'rules' over school rules. In other words she had a 'feel for the game' whereby she could counter the official challenge through recourse to some common sense reasoning.

Although if this were the case then it is to be contrasted with Matt, whose 'rules' all seem to be in harmony, and no doubt one of them is to always obey the rules, rather than question or contravene them. Such submission is of course made simpler when the rules of the game of schooling are closely aligned to the rules established in the particular family and social milieu in which the child grew up. Whatever the case, I was again aware that my judgement about the significance of this event was initially framed by a school discourse of conformity. Whilst a reflexive stance necessitates the self-confrontation of such bias I need to recognise that it is precisely these structuring effects that teachers tacitly utilise to reproduce dominant school behaviours (as I will show in Chapter 9).

On some occasions Marie came into school wearing make-up or jewellery; had to miss playtimes due to her bad behaviour; was often in trouble for shouting out, and so on. Having said that, her general approach to mathematics lessons was one of enthusiasm, although when that became misplaced it did tend to lead to trouble. When asked about her teacher Marie pointed out the following:

Marie She's good but the only problem is we're not allowed to get out of our seats during stories, if we're writing a story. We're only allowed to put our hand up, we're not allowed to go to the toilet in lessons.

Marie would have liked to be able to shout out, wander around the room at will and go the toilet whenever she felt like it. She doesn't want to conform to the behavioural norms of the classroom and of the school. Her manners are not the same as those of the teacher. She would like to choose what to do and when to do it, without having to fit into the arbitrary cultural norms of the school.

Several times in Marie's narrative she talked about conflict with other children, about having had fights or confrontations. On a number of occasions Marie did not complete her homework and on one of these she had her homework diary signed, apparently by her mother. Her teacher doubted whether the signatures were always the mother's. Marie was regularly held back at the end of sessions because of her unsatisfactory behaviour or work rate. From the teacher I gleaned that Marie's dad has been in prison and that her Mum had, according to Mrs Clarkson, had "a string of not nice boyfriends", some of whom were reported as being violent.

Both Marie's year five and six teachers expressed grave doubts about whether or not Marie would be able to stay out of trouble following the transfer to secondary school. This might appear obvious to the reader and was to me, but this apparently obvious view was not shared with the teachers in the secondary school and it is a moot point whether or not this information/perspective would have helped or hindered Marie after transfer. This has to do with the potential/problem of a 'fresh start' at the primary-secondary school interface that I will discuss in Chapter 10.

Marie doesn't have any good friendships with other children in her class and when it came for them to decide who they would like to be in a tutor group with at the secondary school her choices were all girls from the other year six class. Often she seemed to get on better with the boys in her own class and playing football further supported this. I once arrived at the school early in the morning only to find Marie ordering the boys that were playing football around. Her mum admitted that she might have got her "tomboy" attitudes from her.

So Marie's time in the primary school has been problematic at times with her experiencing conflict with her peers, the teacher and the school system in a variety of ways. In spite of that she does genuinely seem to like doing mathematics. Although she professed to like the 'shape and space' work in particular, particularly when drawing or making, she seemed to be most happy when she could work through a repetitive exercise (like those given by her mum) and compete with Matt and others to finish first. She enjoyed the challenge of whole class questioning and offered good solutions most of the time but the fact that she tended to blurt her answer out without waiting to be asked meant that often her ill-disciplined enthusiasm results in getting told off.

Gradually through the year Marie became increasingly disaffected, but she still managed to achieve comfortably a level five in the KS2 National Test for Mathematics. During the time of my fieldwork in the primary school she pushed the boundaries of acceptable behaviour increasingly frequently. In many other ways she remained very sharp, always aware of when I had noticed her doing something untoward and the only one of the children who interpreted the video camera in a very straight way, addressing it as me most of the time.

Marie: a pre-transfer sketch

Marie is an interesting case in this study due to the way in which she resists the conforming, structuring power of the school system. Unlike Stacey, who is marginalised by the incompatibility of her dispositions with those best suited to the school system, Marie resists in the same situation. Like Stacey, her response is not dissimilar from that exhibited by her mother, i.e. there is a clear theme of reproduction. Many of Marie's values, framed as they are by her upbringing in two urban districts of the city, incorporate strategies that (this suburban) school would consider antagonistic. These are not only behavioural dispositions but include dispositions concerned with ways of working in school, ways of responding to others, manners and so on.

Marie's mathematical attainment was not that different from that of Matt, and indeed she achieved the same level in the KS2 examination. However, by the time of her transfer to the secondary school her behaviour and attitudes were beginning to inhibit her progress within this schooling system, with its more conservative, traditional values.

The discordance between her family derived learning dispositions and those espoused in this school context meant that she doesn't quite fit it. In addition there was another emerging influence, that of her peer group which was rooted in the urban culture of her upbringing. That peer culture is less passive, and more confrontational than the peer culture of middle class suburbia, which is predominant in the primary school. The overall effect of Marie's social history is that when there arise conflicts between the structuring effects of the school and the values and priorities of her family, those of

the family and social milieu, with its resistive, authority-challenging peer culture take effect. So rather than passively conceding to the demands of the school system, or allowing it to marginalise her (c.f. Stacey) she resists, challenging its rules and norms and creating conflict situations with teachers and other children in the process. Although I have highlighted a growth in this sense of resistance over the year, it is partly held in check by the structure and ethos of the primary school. Working in one classroom, with one teacher, in a school where all of the staff know her is quite different from the situation to come.

Everyone that I spoke with who knew her expected that upon moving to the secondary school, when the constraining influence of the familial primary school was lost, she would be more strongly influenced by the peer group. The result would probably be increased disaffection and alienation from the schooling process.

6.6 THE YEAR SIX TEACHER – MRS CLARKSON

As should be clear from the cases so far Mrs Clarkson had been teaching at the school for a number of years. The parents of the case study children all considered her to be a highly committed professional. She came into teaching having already worked in the Civil Service for the National Assistance Board "visiting the slums, the drug addicts, the down and outs, the workhouse". She had taught for the last twenty years at this school and so knew of the families, the parents and any siblings, having taught many of them.

Pam I've seen a lot of the other side of life. I've seen a lot of poverty and a lot of poor homes and a lot of people with tragic lives, dreadful lives, that I would never ever have come across and I didn't know people lived like that. I had a very strict upbringing, very sheltered. If I went to a party I had to be chaperoned by my brother. It was as close as that.

Something of this traditional, conservative upbringing comes through in her teacher values:

Andy So, how would you describe yourself as a teacher? What qualities do you possess? What are your strengths, do you think?

Pam Erm...I think the most important thing is to be fair. I'd like to think I treated all children fairly, you know if they misbehave then I'll deal with it and if they kick up I'll say, "well you now think about it, were you doing what I asked you to do? Am I being fair? Yes you are being fair, well, right, you miss your break." I think you've got to be fair always and I think children like to be organised. They like to know where they stand. They don't like this free for all it doesn't matter where I put my coat, where I put my bag, and I'm an organised person and I like children to be organised and I like them to respect their property...I'd like to think I was kind, I wouldn't like to think

> that I was cruel. I have some teachers in my past who I thought were cruel. I went to a strict girls grammar school and I was the only one from our [primary] school who passed [the 11+] to go so I didn't know anybody, so it was straight you know get on with it and I thought that some of the teachers were not particularly nice.

Fairness, kindness, organisation and a respect for material possessions are the values seen here but there is no questioning of whether a fair approach which leads to Marie being punished more frequently than the majority of her peers is in fact fair. The notion that children 'like to know where they stand' is really about having clearly articulated expectations and rule-boundaries. This of course is all well and good if those expectations and boundaries for attitudes and behaviours overlap those of the home and wider social milieu but if there is considerable difference is that system still fair? The teacher might consider herself to be being 'fair' in expecting all children to conform to the same standards but if this means nothing out of the ordinary for some and considerable dispositional conflict for others then such conforming is patently unfair. This was Bourdieu's (1974) point, that under the banner of fairness and equal opportunity those whose cultural heritage fits least well are structurally restricted from maximising the benefits of schooling.

Her assertion that children like to be organised is interesting because it is clear that Marie's style of organisation, differing as it does from Mrs Clarkson's, has brought her into conflict with the teacher. Those children who are from more conservative families seem to get an easier time in this respect. It might seem from the previous four case reports that the teacher's favouring is related to them being boys. However, data collected from the class interactions as a whole shows this not to be the case.

Regarding her mathematics it seems from watching her approach to teaching and talk and talking about mathematics that she has an instrumentalist view of the subject:

Pam I like mathematics very much and I'll tell you why I like it because I find writing poems and creative writing very hard. I could always do comprehension and clauses and all these things but when it came to creative writing you'd work really hard at it and the teacher would write on the bottom quite good or something and you'd think well that's only her opinion. I actually think it's very good. But my maths...its right or wrong...and if you got it all right they couldn't put quite good on they had to put good on because it was. So I think over the years I developed this thing where if it was factual and if it could be measured then nobody could put you down on that. I don't know I just enjoyed maths.

These espoused beliefs about the factual certitude of mathematics have been shown to be associated with enacted teaching practice (Boaler, 1999; Ernest, 1989; Thompson, 1984; 1992) and this is evidently the case from the fieldwork. Throughout the year she revealed, through comments that she made to the children some interesting views about how mathematics should be done. On one occasion the children were doing some mathematics when one boy was talking. This was met with a curt "you can't do maths and make a noise". There was not a lot of discussion in the mathematics lessons and certainly very little collaborative group work. Whilst this teacher had embraced some aspects of the National Numeracy Strategy she had retained many of her well-established practices, some of which do not fit well within the pedagogic preferences of the NNS. She was of the opinion that learning mathematics was not a social activity.

She did in fact point out that she was "quite traditional", liking the children to do lots of paper and pencil work. However, she did also enjoy doing more practical *shape and space* work. The maths lessons were not to be confused with English: long sentences when describing two-dimensional shapes were not acceptable. Also, diagrams could not be enhanced – this was not art but mathematics!

Each morning the children had to complete some mathematics questions that had been written on the board when they first arrived in the classroom. The emphasis was on repetition and practice, that is the dominant form of mathematics practice in the class. During some oral/mental starts to lessons she was quite dismissive of alternative methods that children had to solving problems. These alternatives often seemed perfectly acceptable and sometimes quite ingenious. So mathematics, whilst being the teacher's favourite subject, was not approached in a very creative way. There was little room for talk, alternative approaches, or the development of problem solving, investigative or problem solving skills.

Most of the time the class use the same published mathematics scheme that the teachers have been using for the last few years. Often during these lessons I was struck by the content that they were covering, as I knew that some of these things would be revisited in year seven. However, at the same time it was clear from my discussion with the children that they were not always developing an adequate or deep understanding of the concepts, partly as the rate of curriculum coverage was determined to a large extent by the impending national tests.

On the whole the teacher described her work as enjoyable, including teaching this particular class, which was evidenced in the way that she dealt with them. The classroom was an orderly place and the children were largely happy to be there and worked well in lessons. Her considerable experience was clearly seen in her teaching and the links with the families, some of which have already been mentioned, added to the quality of the experience that the children had through year six.

Her relationships to the four children in this study were varied, depending to a large degree upon the relative positions of their habituses. The child whom she favoured the most, Matt, who also 'happened' to be the most successful mathematician in the group, had an ex-nurse mother who now worked as a primary school classroom assistant. Putting aside his attainments, his values were very similar to those of the teachers: hard work, helping others, fairness, organisation, etc. As I have indicated above, Marie, of all of the children had the most confrontational relationship with the teacher, although this was often only mild or moderate. This resulted from the discordance between the enacted values of the teacher and those forming the dispositions of Marie's habitus.

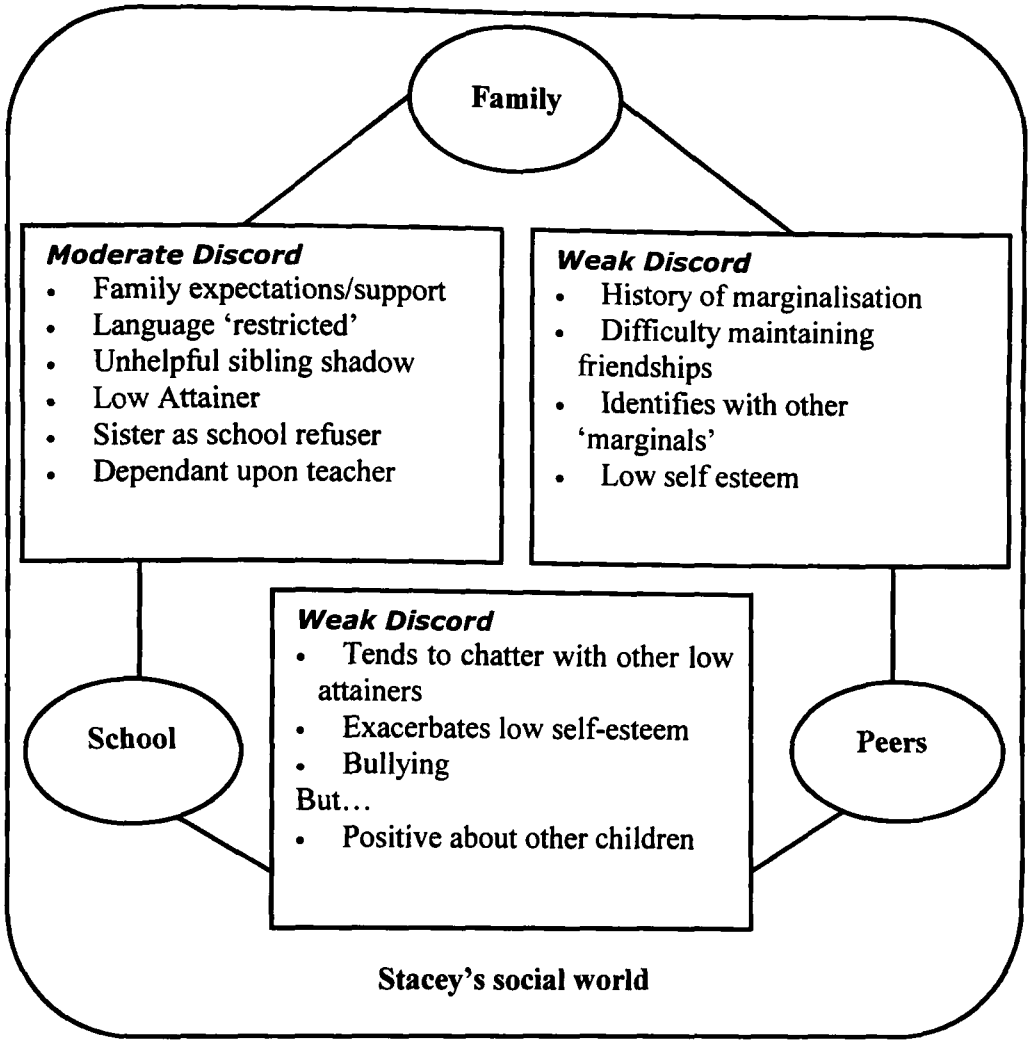
6.7 SUMMARY

Through these case studies of the children in the year preceding their move to the secondary school, it became apparent that the structuring of their experiences by the school, family and peer fields, and their responses to those experiences, has already positioned them with respect to their learning of mathematics. Below I will summarise these influences to help the reader to consider how these children are positioned in relation to one another. Such relations or distinctions lie at the heart of Bourdieuan analyses of class, taste and style (Bourdieu, 1984). In visualising the data in this necessarily simplified way I am conscious of how it might be oversimplified or 'flattened'. The children's experience is in a number of intersecting social spaces, each complex and transitory and in taking these pre-transfer snapshots I am only presenting a simplified, summarising perspective of how the children have been, and are being, positioned at the point of school transfer. The boundaries of these social spaces are unclear and very much overlapping. However, for the purpose of these diagrams I have pulled these social spaces (family, peer and school) apart to reveal the dispositional strategies of the children that enable the three fields to be in harmony or discord. For children's experiences of two fields to be strongly harmonious the enacted dispositions, of the children themselves and of all of the significant others, must be highly valued in both fields. If this is not the case then there might exist a moderate, weak harmony or discord.

In each of the following diagrams I have summarised the interaction between the fields for each child and added a few examples by way of an explanation. I also offer a few explanatory notes underneath. The diagrams are not intended to replace the sketches

found at the end of each case report but they simply conceptualise the ideas in a diagrammatic form. In opting for a musical metaphor here, with its notions of harmony and dissonance or discordance, I acknowledge that these are interpretive terms, particularly in an age where traditional tonalities have been complemented with contemporary modern and post-modern ones. The ideas of harmony and dissonance are embedded in Bourdieu's work and are helpful in indicating the mutually supportive or contradictory workings of the fields, whilst at the same time militating against reductive simplicity.

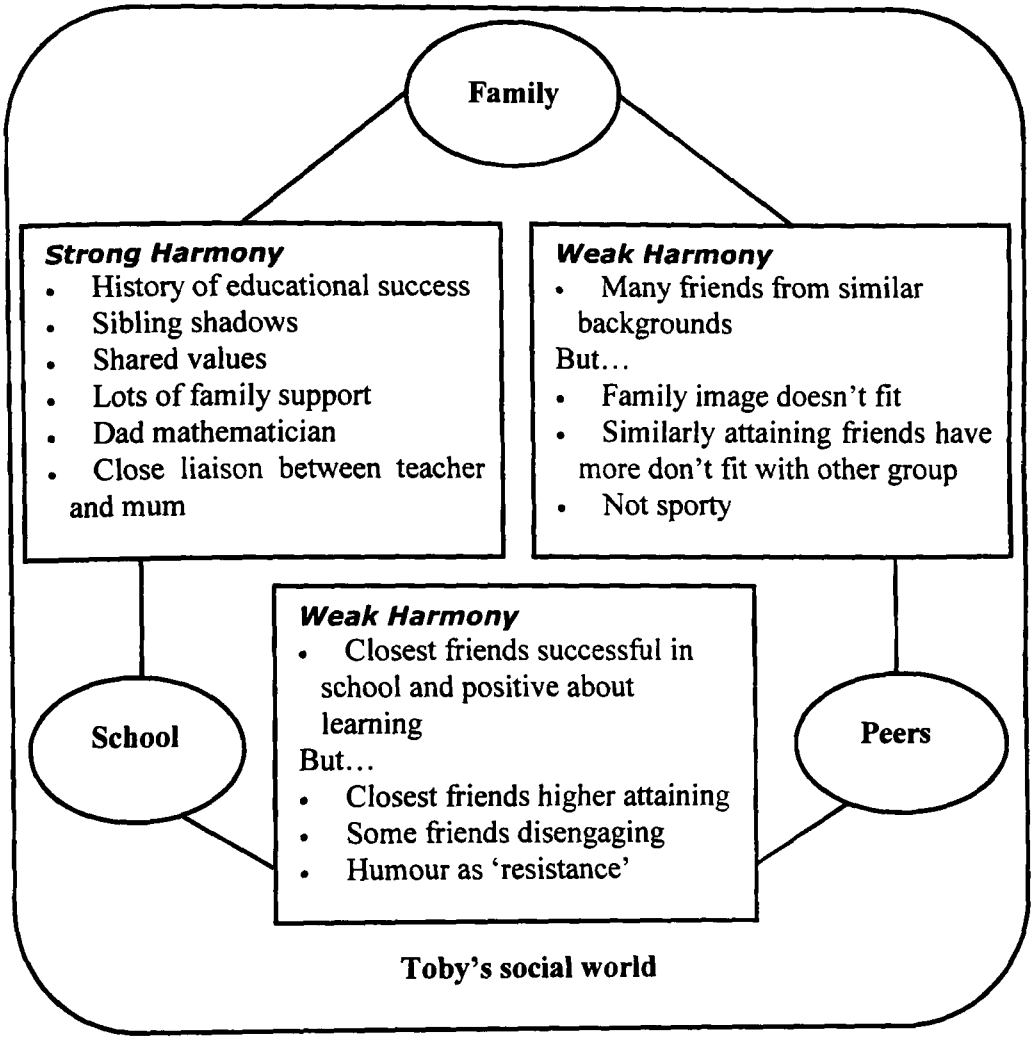
Figure 4: Field map for Stacey (pre-transfer)



Explanatory notes:

In contrast to the other three children there is no real area of harmony in Stacey's social world. She has nowhere where she has a sense of relative power or self-worth. This is a problem as there is nowhere in this space to 'build' from. She is marginalised and socially weak, vulnerable to the positioning strategies or symbolic violence of others on all fronts. This is not a good position to be in. The supportive nature and familial ethos of the school moderate the discordance.

Figure 5: Field map for Toby (pre-transfer)

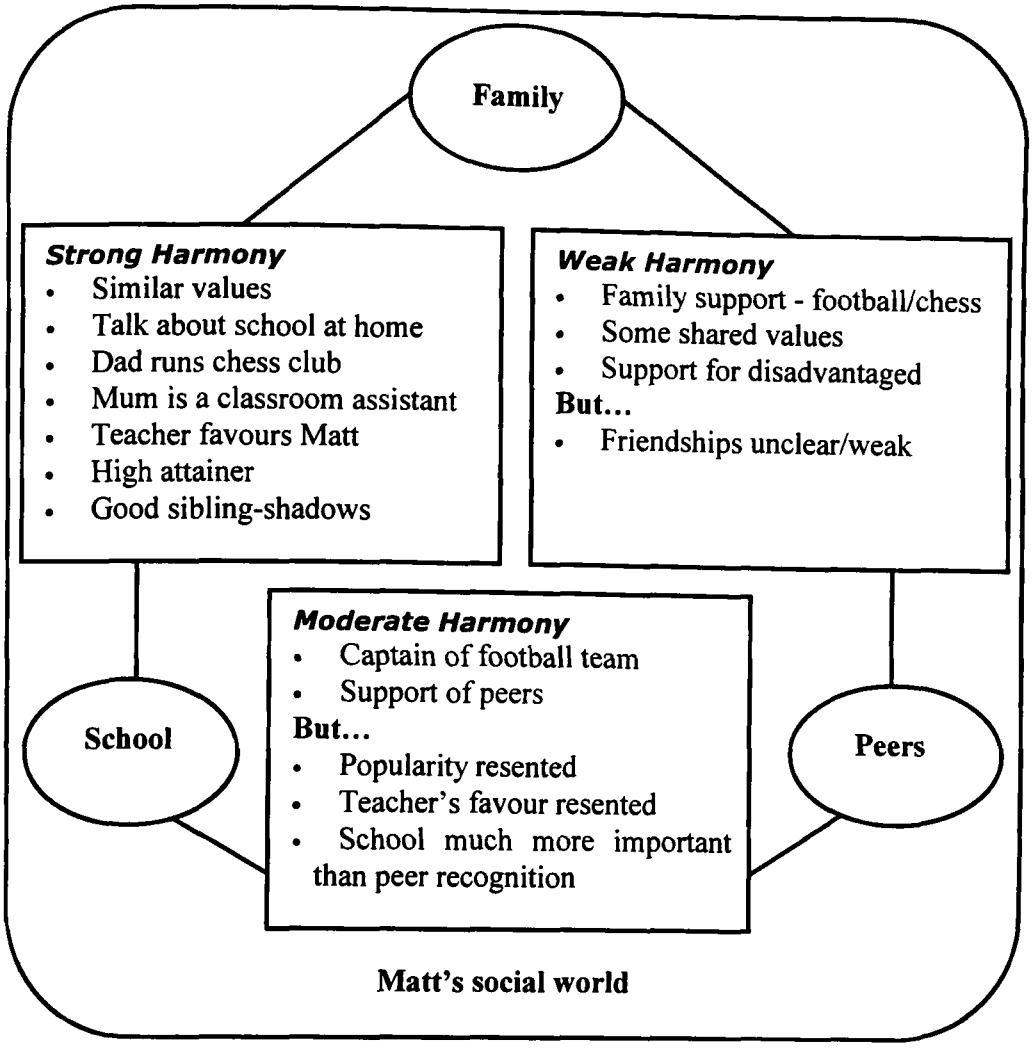


Explanatory note:

The harmony between family and school is very strong but the right hand side of the space shows how increasingly there is a tension between two groups of Toby's peers: those from similar backgrounds and those with similar attainment. Toby is becoming increasingly aware of how he doesn't fit within the high attaining group, membership of which is an unspoken prerequisite of the harmony between school and family. He tries to cover this mis-fit over through recourse to humour and strategic disengagement, in an attempt to renegotiate his position in the peer group. This peer group 'pulls' spatially

opposite to the strong interface between family and school fields and it is this tension that gives rise to considerable risk for Toby. The very strength of that link, with its unacknowledged 'certain level' of expected attainment is in fact disempowering Toby, forcing him to develop a more powerful identity elsewhere, for example in the peer group.

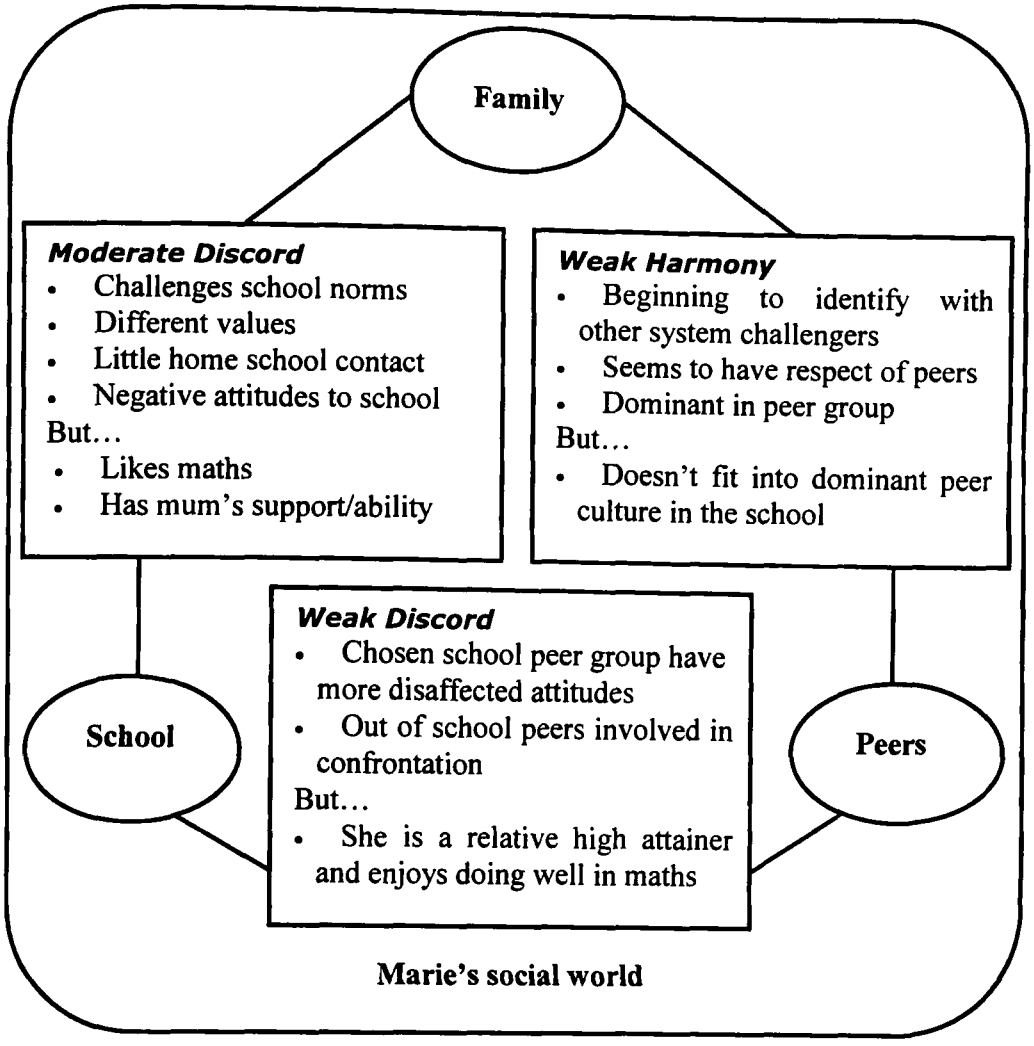
Figure 6: Field map for Matt (pre-transfer)



Explanatory note:

Matt has the most harmonised social world of the four children and although there are some tensions surrounding the peer subgroups that he is in, these are made worse by the small size of the peer group. Matt does not place great store by the effect of the peer group, unlike Toby. His desire for a good reputation places disproportionate value upon the teacher's perspective. As a result the school/family field interface remains strong and unchallenged, and could potentially be further strengthened if the dissonant elements of the peer group are reduced in the move to the secondary school.

Figure 7: Field map for Marie (pre-transfer)



Explanatory note:

For Marie there is considerable discord between both her experience and position in the peer/school and family/school regions of the space. However, this is due in part to her very clear sense of family dispositions and the way in which she chooses and controls her friendships to include those who will 'naturally' challenge the *status quo*. These peers are not all in the school as her home peer group is geographically distant from the middle-class suburban peer culture of the school.

The structure of Marie's social world is similar to that of Toby's and Matt's in that spatially opposite places on the diagram create the potential for tension in children's learning experiences. Marie and Matt are similar in that the strong field interface has a dominant effect over the third space. For Matt this means that the strong school/family interface renders the problems in the peer group largely irrelevant. On the other hand, Marie's has given priority to harmonising peer and family influences, which takes precedence over submission to some of the regulations of the field of schooling. This does not bode well for the move to the secondary school, which is where my attention now moves: the beckoning 'big' school.

7. THE 'BIG SCHOOL' BECKONS

7.1 INTRODUCTION: SETTING THE SCENE

This shorter chapter serves as an interlude between the pre- and post-transfer case reports. Herein I introduce the department because these teachers form part of the post-transfer cases of Chapter 8, although their role in the school transition process will be analysed in much greater depth in Chapter 9.

The move to the secondary school is the focus of this study. However, two key events during the first year of the data collection had a significant bearing on the subsequent direction of the research. The first of these was that whilst the children were in year six, the teachers of the mathematics department at the secondary school decided that for the first time it would 'set' the children into ability groups after a few weeks in the new school. I had been hoping to negotiate which classes they went into for mathematics so as to reduce the permutations of classes and teachers which would no longer be possible.

The second problem concerned data transfer. For each child a complete file was passed on from the primary to the secondary school but for some reason the collection, collation and distribution of the results of the KS2 national tests was delayed. Inadequate data transfer has been cited as one of the main problems concerning transfer over recent decades (Hargreaves and Galton, 2002b; Nicholls and Gardner, 1999). In this case the year seven teachers had no record of prior performance and so it really did appear to be a fresh start situation. However, as I will show, the teachers had

sophisticated and subconscious ways of *guessing* the prior achievement, likely attitudes to study and potential parental support within a very short space of time. These strategies depended upon the habitus of both child and teacher but it was this very process that then became the focus of the research: the social repositioning of the children following transfer.

The result of the setting process was not immediate. Rather the children stayed with their form groups for six or seven lessons and were then regrouped. Just as in the case of the slow data transfer this afforded me another opportunity, *viz.* to see how an increased number of teachers would respond to these children as they began to teach them.

7.2 THE DEPARTMENT

Before I move on to describe how these children managed the transfer to the secondary school I will introduce the teachers in the department who worked with the children in the study. I have described the school earlier and further detail concerning the different teachers will be included in the cases of the children. This way I can uncover the dispositions of the teachers within the narrative, with a similar chronology to how they became known during the first term of the new school year. However, it will be helpful for the reader to know a little about each teacher first.

7.2.1 Mr Newcombe

Mr Newcombe is the newly qualified teacher. He had completed his main teaching practice at the school, they liked him, and he was subsequently successful at interview.

At about thirty years of age, he has entered the teaching profession after a career as an actuary with a company in London.

Mr Newcombe: There was two things that I always wanted to do. I always wanted to do well in business and I always wanted to be a teacher when I was at school and I almost did it straight from university but I remembered my maths teacher had said "whatever you do Dave, don't become a teacher straight from university. Go into business, get a bit of experience and then go into teaching." ...I thought, I'll go into business first and see what I think of it. I really enjoyed it but did get the feeling that I wanted to do something more useful with my life.

Andy: What do you mean by useful?

This conversation proceeded to a semantic discussion of the difference between usefulness and significance, the latter being more to do with making a personal impact upon learners, rather than simply doing a good job. Such an aim is more concerned with the broader development of children than enabling academic competence.

Mr Newcombe: I think there is part of me that wants significance, that's why I am always a bit conscious of that...Yeah, that is what I was saying and I really did want to make a difference to somebody in whatever I was doing. I didn't want my life to be about making money or working millions of hours to make French people rich...it was a French company. So a genuine belief that I could actually make a difference to people's lives and that is probably one of the most amazing things that you can do.

So his teaching philosophy is concerned with making a difference to children, not simply being useful in teaching them mathematics effectively, but leaving an impression

upon them as his AS level teacher/advisor had done. What underpins these values and do all children want to be so effected by such significant teachers? Mr Newcombe's Christian faith has probably been a factor in this search for significance. Or perhaps this should be ordered the other way around, with the adoption of a Christian perspective being a result of the desire for significance. Either way these dispositions are part of a habitus that, as I described earlier, considers the meanings of names to be important. Moreover, Mr Newcombe was able to reflect on this strategy and was alarmed by the implications of his judgements of children with names arising from other social backgrounds. Such biased judgements were not quite the significance he was hoping for. Before moving on the whole notion of significance needs questioning, regarding whether or not this is, and should be, a function of school and teachers *per se*, or whether or not the desire to teach, or be taught by, someone who has significance might not be a socially uniform desire. My account of Marie suggested that school is not something that she wants to have a significant effect on her. Its significance is its ability to position her behaviour as outside the boundaries and thereby to act so as to marginalise her. Contrast that with Matt who is keen to impress in school, maintain a good image, and fit in. I suggest that Mr Newcombe might find Matt a more likely recipient of his significance and that this is probably another instance of classified perspectives on the nature and purpose of schooling.

Mr Newcombe's PGCE training was completed at Nottingham in the first year in which I lectured there so I already knew him quite well from that context. He had a rather relaxed manner and was always confident and commanding in the classroom without being overbearing. On a number of occasions he referred to his classes in rather

peculiar ways, for example calling them "ladies and gents". He was having a successful NQT year when I conducted this research and I heard nothing but praise from the other members of the department concerning the way he had begun his teaching career at the school.

7.2.2 Ms Black

The person overseeing the implementation of the Framework for Teaching Mathematics in the department was Ms Black. She had been teaching for about five years in this her first post. Her approach to seating her classes is reflective of her generally tight, well ordered classroom and well-planned lessons. She appears stern at times, being known for her "firm but fair" discipline, and has a nice rapport with her classes.

Ms Black I do seating plans with all my other groups and by that point I generally know some of the kids. So when I do it for them I don't know, it's based on a kind of "OK well you two aren't going to sit together" that kind of thing, and I just decided. I can't remember what I did last year for year 7. I think last year I didn't bother until I'd got to know them, and this year I think I just decided, just as a kind of introductory thing, things are going to be the way I want them to be, I would do it, because it takes two minutes to sort it out, it minimises the fuss at the beginning of the lesson...who they're going to sit with, where they're going to sit today. So purely a classroom management thing I think.

Classroom management is important for Ms Black and she would tend to keep things very tightly organised/controlled as evidenced by her reliance upon seating plans. She started the year teaching the form group that included Toby and Matt. Following the setting process she taught the top group in that half of the year, which included Matt and Marie. In fact, Matt was the only one of these four students who retained the same

teachers. I say teachers because a number of the year seven classes were split groups with teachers sharing the lessons in the ratio 1:2. The net result of this is that some of the children were taught by as many maths teachers in the first four weeks of their secondary schooling as they had class teachers in all of their previous four years of schooling.

7.2.3 Mrs Gardner

Mrs Gardner has worked at the school for many years. She is a well-established member of staff and is liked by the students. Her two sons attended the school (I taught the elder for four years) and she has a maternal manner with the children, with a very strong pastoral emphasis to her teacher role.

> Mrs Gardner Well I think that at the end of the day school is about educating the person as a whole, you know, making them good people when they leave. I don't think it matters about their academic achievement as long as they've achieved the sort of level I expect them to. Lower ability pupils I don't think should be undervalued cause I think that some of them are smashing people and I think basically we are just educating them for life aren't we. I mean they leave us, I like to think that even in my maths lessons I've given them an enriching experience and it's not necessarily always been a mathematical experience.

The notion of enrichment is seen in all of her dealings with children, including the types of mathematical experiences she plans for her classes. She has retained an approach to mathematics teaching that encourages discussion, group work, problem solving and uses wherever possible well tried and tested resources from a time when the department worked in a very progressive way. This approach might be described as enrichment, which is the term that she herself used to describe her broader role as a teacher. She

does not like the department's preferred approach to arranging classes with pre-prepared seating plans, but rather gives the children the responsibility of choosing who they sit by. Similarly she does not push children to respond to questions but responds largely to those who offer solutions. This is quite different from Ms Black, who spreads questions evenly around the class and has a tightly regimented seating plan. The result of this for Mrs Gardner is that in the first few lessons of the term she does not get oral responses to questions from all of the children in her class. This in turn affects her initial perceptions of those children's mathematical competence, as I will show later.

Mrs Gardner explained in a lengthy interview that a major focus of her teaching is concerned with ideas now covered through citizenship; it is an holistic view of teaching where she is more concerned about the development of the whole child than simply about their facility with mathematics. In keeping with this she enjoys the pastoral aspect of her role. Another dimension to her teaching is the focus on thinking skills. Her questioning style is interesting and thought provoking and she encourages the children to take time to consider mathematical problems and concepts. Consequently she confesses to warming to those children who like to think about mathematics in those more exploratory ways and not simply remember algorithms.

Mrs Gardner lives in the catchment area of the school and her two sons had recently moved through the school. In addition she had a large number of social contacts in the area and had taught at the school from many years. This combination of factors meant that she knew a lot of the families of children in the school, one of which was Toby's

family. He was setted in Mrs Gardner's group and the knowledge that she had of the family would have a considerable impact on her initial impression of Toby.

7.2.4 Ms Williams

Like Ms Black, Ms Williams had only been teaching for a few years and consequently her approach to teaching mathematics was more informed by the KS 3 strategy than the history of the mathematics department. Having said that this teacher was quite creative in her approach to teaching mathematics and observing her teaching was always very refreshing (and here again I betray my own pedagogic preferences). She incorporated various kinaesthetic tasks into her lessons and these appealed to Stacey, whom she taught following the setting into ability groups.

Ms Williams grew up in a small mining village in the Welsh valleys, where there was a high level of unemployment and apart from her father, who was a science teacher at a nearby comprehensive school, she describes her family as working class. She describes how she had to "act stupid", to "try not to be too clever" in order to get along at school. This history has shaped the way that she now approaches teaching and has contributed to her preferring to teach lower ability groups.

> Ms Williams I enjoy, I suppose I actually enjoy low ability more than I enjoy high ability in terms of how you get on with kids, sometimes the top sets I've had, I really haven't enjoyed teaching ...arrogant people.

This preference towards the lower ability groups disguises a 'classed' perspective and the contrast between low ability and arrogant is more to do with the relative self-assurance that arises from the unequal distribution of economic and cultural capital. It

is clear that these tensions arise from the juxtaposition of schooling and life history in the economically challenging circumstances of the Welsh valleys with the new context of a suburban schooling. This unsettling tension lead to Ms Williams leaving the school at the end of the children's first term in the secondary school.

7.2.5 Mrs Davison

Mrs Davison has been working part-time in the department for many years like Mrs Gardner. They have both seen tremendous changes not only in the education system but in the mathematics department. She has a traditional approach to teaching mathematics and a very serious classroom demeanour. She is not very positive about some of the recent developments in mathematics teaching. Mrs Davison considers the newly developed mathematics bridging units to be unnecessary, merely a "comfort blanket" for pupils arriving at the school. She doesn't consider them to have much use in terms of children's mathematical development. Moreover, Mrs Davison likes to have a "fresh start" to the new school:

> Mrs Davison I suppose we are discounting what they've done previously, but what we are doing in the first few weeks is getting to know them and I think that their talents and abilities come through fairly quickly, without you having to have it on a bit of paper that says it really. It's nice to know [prior attainment levels], I think from the point of view of setting we need to know the level that they were at when they were at primary in that sense but from the teaching point of view I'd rather find out for myself.

This is interesting because these sentiments are at the heart of this research. The question is how "their talents and abilities come through", what the teacher's role is in

that and what bias are hidden in those assessments. Mrs Davison admits that she has made mistakes when making these early evaluations, "somebody who is very articulate and maybe appears quite bright, not in an academic sense but as a person", might be thought to be more able than they really are. Being very articulate might be described as linguistic capital but the 'appearance of brightness' is more complex and involves the various layers that will be explored in chapter seven.

Mrs Davison's husband is one of the deputy heads at the school and so between them they know many of the children at the school and their families. They have also taught some of the parents which gives them a different perspective from some of the younger members of staff. Marie was initially in Mrs Davison's class. Marie's sister was also taught by Mrs Davison and although she insists that each child is considered on their own merits and not in the light of the experience with the older sibling she does reluctantly confess to seeing many of the older sister's character traits in Marie.

7.2.6 Mr George

The other male teacher that was involved with the four children has also only been at the school for one year but he is the new head of department. Previously he had taught in city schools and then made the move to what he had perceived to be a less pressured school environment. Having grown up in Sunderland as the son of a dock-worker there is a sense in which he would rather be working in a working-class city school and so was experiencing some tension between the school ethos and his personal educational philosophy:

Andy First of all can you tell me why you became a teacher?

Mr George I didn't want a job where you had to play golf to progress I think, is a flippant answer. I wanted to be in a professional that was very people centred and I'd done voluntary work with young people and I'd enjoyed the energies, the experiences they give you really and it just seemed like... I suppose it seemed like a safe profession.

...I've always had a heart for the underdog I suppose, for people who struggled and...a lot of my career decisions have been to work with disadvantaged children really and to try to give them the opportunity to move forward so why I'm in [this suburb] at the moment I don't know.

That Mr George ended up in this school with such a professed concern for 'the underdog' is strange and is related to his personal circumstances at that time. What is interesting in this study is how he might then respond to the likes of Marie, who in some ways could be described as an underdog. Marie was taught by Mr George following the setting process and although she "stands out like a sore thumb" as being different, as one who could be described as an underdog, she didn't seem to get any particularly favourable treatment from Mr George. It would seem that he has conformed to the dominant socially disadvantaging practices of this school, even though he maintained a critical discourse about this process. He suggests that the situation for children like Marie who come from city (lower SES) districts, out of catchment might actually be a lot worse:

Mr George The school is set up as a [suburban] school but its catchment is not necessarily a [suburban] catchment. So it's sort of like a parallel little school goes on, and I get the feeling that as long as...I think there's negative expectations of some of the kids that come from the [city]. Certain types of kids are just sort of like left to get on with it and it is almost sort of like...you

know what they're like...wishy-washy, middle class tolerance of low expectation of both behaviour and academia really, which I think you get away with it because the vast majority are compliant, if not arrogant but you wouldn't, you'd get slaughtered if this school was anywhere else.

That he should mention compliance is interesting as he contrasts what they are complying to as different from the dominant practices in other schools in which he has worked. In other words, he views this conformational power of the school to be linked to its suburban location, the dominant 'middle class'. I asked him whether he felt he had escaped from his working class origins:

Andy So do you see yourself as having escaped from that?

Mr George I've always felt a little bit lost in that culture of it's nice to do well at school but it's not really that important. I think if I'd have been pushed, people were always interested in me but I was never pushed.

He begins here with a classed perspective on the unimportance of school and gives the impression here and elsewhere that this sentiment is in a sense autobiographical. This links back to the discussion arising from Mr Newcombe's search for 'significance' in his life-work and whether such a value is peculiar to certain social origins. What Mr George here reminds us of is that for a large group of people school is 'not really that important' but at the same time he indicates that 'pushing' can enable the learner to escape the strictures linked to social positions where school is deemed unimportant. For several of the case study children not only is school really important but doing well is really important.

It is Mr George who has pushed for setting in a department that at one time has all ability groups throughout years seven to nine.

> I would I see grouping not as some sort of elitist reactionary, madman crawling around, wanting to put people in pigeon holes and lock them there and never move them. I see it as a massive school ability to be able to target pupils and be able to pinpoint, and that's always been my view of grouping. That no matter where you are you deserve the top quality of input that you can possibly get.

Although Mr George does not do a lot of the teaching of the four children his influence upon them has been considerable, partly through the consolidation of the mathematics bridging units and partly through the grouping processes that he has put in place for children new to the school. It is interesting that a defender of 'the underdog' should be the person to introduce a more extensive system of setting which acts so as to further marginalise the very children for whom he expresses most concern.

7.3 SUMMARY

This is a mathematics department made up of very different kinds of teachers who come from different backgrounds. Consequently, the transition from the children's mathematics experiences in the primary school is made more difficult to predict due to the complexity of the mathematics learning landscape into which they will be moving. Not only do the teachers have very different teaching experiences and standing in the school, but their own social positions are set to play a significant role in the lives and mathematics learning trajectories of the children. My theorisation of educational reproduction is dependent upon the privileging of teachers' cultural and symbolic capital and therefore the favouring of children with matching types and volumes of such capital resources. The following chapters will demonstrate how the interactions between teachers and children are themselves interactions between larger social milieu. From this arises the potential for generalisability.

8. THE CASE STUDIES: POST TRANSFER

In this chapter I proceed with the four case reports from Chapter 6. The data reported here is from the first term in the new school and the analysis of this data describes how changes in the relative influence of the three fields of inquiry (school, family and peer group) affects the children. In the four diagrams contained in the chapter summary, the reader can see how the harmonisation between the various fields has shifted as a result of the transfer to the secondary school. In all cases the influence of the family, enacted in the dispositions of the child's habitus, can be clearly seen, but the effect of this influence varies. Whilst for some there is an increased sense of resistance between habitus and school structure, for others the family-structured habitus affords a harmonising advantage in the new social and learning context. In the summary I will show how the change in the culture of schools opens up the space in which the influence of peers can become more influential in shaping responses to the schooling process.

8.1 INTRODUCTION

Having set the scene for the children to arrive at the secondary school the next two chapters continue the analysis into this new context. The first of these two will build upon the case reports in Chapter 6, largely from the perspective of the children. In Chapter 9 the focus of attention is on the secondary school and mathematics teachers and the effect that they have upon the new arrivals to the school. The analysis of that next chapter is more focused upon what Bourdieu described as:

> ...the extremely complex mechanisms through which the school institution *contributes* (I insist on this word) to the reproduction of the distribution of cultural capital and, consequently, of the structure of social space. (Bourdieu, 1998b, p. 19)

Before exploring the school institution's role in social repositioning at the primary-secondary interface I will focus in this chapter more upon the 'contribution' made by the children and their families. I will return in the summary to reconstruct the field maps from Chapter 6. These will show where the relative harmonies and discords have changed, and will offer a diagrammatic explanation of the transformations that have occurred in these children's worlds during their move to the secondary school.

Of course, neither of these two perspectives is complete without the other but I have chosen to separate them in the construction of the argument, whereas in fact the stories are as interwoven and overlapping as the fields in which the various acts are situated.

8.5 STACEY

Stacey began the year with Mr Newcombe and Mrs Gardner as her mathematics teachers. During the first few weeks she seemed happy and had apparently made some new friends, although those friendships did not last long. She had, after only a few lessons, positioned many of her peers as good or not so good at maths. This was done on the basis of how they responded to the teachers' questions, both in mathematics and in other subjects. She made an assumption that the boy who is really good at English is probably also really good at maths. Stacey didn't answer many questions in the class at first but she has developed a means of giving the right impression. Repeatedly, during the early lessons with Mrs Gardner she would wait until the teacher had committed herself to asking someone else for an answer and then throw up her hand. Although she was unwilling to confirm this strategy, from what I knew of Stacey's mathematical ability I would suspect that many of the questions were too difficult for her, and she had also shown in the primary school that she had strategies to cope with high-risk whole-class questioning. She had similarly been able to give a distorted impression of her potential through her written work for Mrs Gardner. After two lessons the teacher expressed the opinion that Stacey seemed "quite bright", well organised and on task although she did admit that she had been very chatty with some of the boys in their first lesson. Stacey's work was done neatly, as in the primary school, and she appeared to be making good progress but there was not a very good level of understanding when she was questioned. Mrs Gardner was not systematic in her questioning of the class and of all the teachers involved in this study she was most likely to misdiagnose a child's mathematical potential.

I also spoke to Mr Newcombe after a couple of lessons with Stacey. He was comfortable with assessing her KS2 national test level as "a 3, maybe a 4", and thought that although she was "very pleasant" he did not think that she was a very good mathematician. The difference in questioning style of these two teachers is something that has already been highlighted as a reason for differences in their initial perceptions of children's mathematical competence. Mr Newcombe could give examples of the kinds of basic number skills that Stacey was having difficulty with.

The first time I met Stacey in the secondary school was in the corridor after one of her maths lessons and I was struck by how different she looked from when I had last seen her in the primary school. She was wearing a long black skirt more suited to the older girls and had her hair in two bunches, which had the opposite effect of making her look younger. Her appearance was also a factor in teacher judgements of her background. The teacher who taught Stacey following the re-grouping of the mathematics classes was Ms Williams.

Ms Williams ...I guess her background isn't the wealthiest....

Andy Why do you say that?

Ms Williams It's fairly standard, you know labels on bags and cheap shoes. [laughs]

Andy I don't think that's judgmental at all [following from earlier discussion]

Ms Williams I don't want to make any judgements such as in terms of what she can do or how she...or just, but if I wanted to guess her background then that's what I'd say, she seems very friendly, but perhaps why she didn't say much in the first couple of lessons was because she is not as socially aware or socially at ease with many different children that she doesn't know, or some of the

more...some of the other pupils that maybe have a more...I don't know...middle class background.

Like the other teachers she was loath to admit that she made such positional judgements about the children. However, exploration of these judgements reveals them to be complex and extensive (see Chapter 9). To highlight Stacey's social unease was very astute but no doubt this was only one of a number of judgements that lead to her suggestion that she came from a non middle-class background. When I asked her about whether the name Stacey suggests anything to her about her background she was quick to respond "Stacey" in a rather 'common' way; what one might describe as a working class drawl (Stacey is a pseudonym). After some discussion she conceded that children from both poor and wealthy families, but probably not those from highly educated families, might be called by this name. These judgements are interesting as they uncover a subconscious strategy that teachers might use to place children, even before they start to teach them. Certainly the names of the children referred to herein evoke different images of the kinds of families that they might be from.

Ms Williams noticed that in the first few lessons Stacey seemed "a bit dopey" at times and then overly enthusiastic at other times, almost as if trying to draw attention to herself. At the same time she had noticed that she was not finding the mathematics that easy and would often offer incorrect answers to questions in the class. Ms Williams had described her preference for working with those children who are struggling or who come from more disadvantaged backgrounds. Hence she tried to help Stacey, to give her an opportunity to be successful in front of the class.

Ms Williams When she first came she was a little shy for the first 2 or 3 lessons and reluctant to answer. When I was walking round, here's a little anecdote, I told

her a good way of doing, I can't remember what it was, a nice way of finding complements of a hundred or something. I told two of them, and then, when we did the discussion I asked them if anyone had a good way of doing this and nobody answered and I said, "Stacey, I am sure you do" and she stuck her hand up and said what I'd told her.

Andy Why did you do that for her? Was that a conscious decision?

Ms Williams It was a conscious decision to choose people that didn't seem to have a clue what was going on...and I actually told the guy, the boy, more than I told her but he was still not answering.

Whether or not this strategy was helpful in developing Stacey's mathematics is questionable, and perhaps further reinforced her reliance upon the teacher, and thereby the system's power over her. The teacher was seemingly not as interested in Stacey's attempt as she was in her offering the correct answer, even if it was not hers.

On the first occasion that I saw Stacey in this new group, one of three parallel middle groups, she had not done her homework and approached Ms Williams confidently to inform her that she hadn't done it, but that it was okay because her mum had written her a note. Stacey's mum came to the parents evening and Ms Williams was surprised to hear Stacey saying that she "hates maths" as this did not seem to be reflected in her attitudes or work in the classroom. Ms Williams got the impression that Stacey's mum had quite low expectations for her daughter's behaviour, which is in accordance with her sense that Stacey would follow in the footsteps of her older sister. Ms Williams was not surprised by the mother's attitude, manner or appearance and although she believed that it was not inevitable, thought that there was a strong chance that Stacey would become increasingly disaffected at school. Like many of the predictions herein it was

based more upon probabilism than determinism. When the teacher noticed the name of the older sister on the school exclusion board, it increased her sense that such a development seemed likely for Stacey. Until then she was not aware that Stacey even had an older sister in the school...the sibling-shadow appears again. The same concern was expressed by her form tutor at the end of the first term: "if I had to chose one girl who would be a handful by year 9 it would be her". He noted that although she was a cheerful, friendly girl she wanted to be noticed and was sometimes interacted inappropriately with her peers.

Stacey liked Ms Williams lessons, "she makes it fun", and she presented a contrasting view of the parents evening:

Andy	Do you think that she likes you?
Stacey	Yes
Andy	What makes you think that?
Stacey	Because on the open evening in a way she was really jolly and everything.
Andy	On parents evening?
Stacey	Yeah she was saying really good things about me. The one thing about me that she did say...like I always don't concentrate, I can't exactly get my mind to work.

It was important to Stacey that Ms Williams should say "really good things" about her, allowing her to believe that the teacher liked her. Throughout my time with Stacey she craved acceptance, both from her peers and teachers. She didn't always go about it in the most helpful way but when she was affirmed it make a tremendous difference to her, and had a knock on effect on her work. However, she didn't get this enough to stem the

default position of poor self-image and negative view of mathematics. By the end of the first term, she had struggled to do well in the first summative assessment of the year.

Andy	How well have you done in your maths lessons this term?
Stacey	I think I'm getting there slowly but surely
Andy	Getting where?
Stacey	Much better at maths
Andy	Do you feel more confident?
Stacey	Pretty much the same.
Andy	How did you do in your first unit test?
Stacey	Erm...I don't know really
Andy	Do you not know what mark you got?
Stacey	Yes I got erm, I think in maths I got, it could be in maths or it could be in another test. I think I got 48%, not that good [it was in fact one of the lowest in the group and might lead to her being moved down a group]
Andy	Do you know how you did compared to other people in the class?
Stacey	Much pathetic.
Andy	You don't think that you did as well as other people?
Stacey	One person that said that they got 41% and that made me feel just a little bit better but normally I'm pathetic.

Earlier Stacey described how her sister described her as a "dumb-ass" and this sense of personal inadequacy seems to be deeply ingrained. However, despite acknowledging her relative poor performance she also talked positively about the progress she was (actually not) making. The idea that she was "getting there" is one that probably comes from home or her teachers, and she doesn't really have a sense of where 'there' is.

This last time that I met with Stacey our interview finished on a rather disappointing note:

Andy Do you like maths?

Stacey No! I hate maths. That was the only time that I came to speak to the camera so I could get out of the maths lesson

Not only was she clearly very negative about the mathematics but the video diary research had apparently given her an excuse to avoid it. In seeking to explore the difficulties that children have in their mathematics learning I had possibly exacerbated the problem for this child.

Stacey: a post-transfer sketch

The way in which the three fields all had a tendency to marginalise Stacey from the process of schooling and the peer group has continued into the secondary school. Her teachers have picked up clues from her language, appearance, name, etc., that have positioned her as from a certain kind of family and social background. The contribution of the sibling-shadow is also clearly apparent. Not only has she not acquired the kinds of attitudes and dispositions that are valued by the schooling field, her marginalisation by this system has transferred fairly seamlessly from the primary to the secondary school. Harris and Rudduck (1994) referred to the 'pre-packaged reputations' that can be damaging to those children that need school transfer to be a 'fresh start' but this is not the case here. Without the transfer of any official knowledge or data, Stacey has been repositioned in the peer group and by the teachers in an almost effortless way.

Stacey's desire for affirmation is as a reaction to the impact of her family situation. However, through her sometimes inappropriate attempts to gain the favour of her teachers and peers, the school and peer group fields in fact respond so as to confirm her marginalised position. With the larger cohort of peers she is beginning to identify with other 'marginals' with whom she has more in common.

The impact of the family learning dispositions and attitudes to schooling are evident and the teacher and tutor make it clear that they anticipate her school trajectory to be towards disaffection and disengagement. Stacey's mum has already implicitly condoned her failure to complete homework and indicated that she expects the influence of the older sister to increase. As for her mathematics learning trajectory, the prospects are not promising. Despite having a teacher that purposefully intends to

support those from marginalised groups, Stacey has found the work difficult and is at risk of moving from one of the parallel middle groups to the 'bottom' group. Having one teacher that is willing to help children like Stacey is not enough to reverse the powerful structuring effects of the school system. Increasingly Stacey will head on a mathematics learning trajectory that will not run above the magical threshold of grade C at GCSE and so she will be further marginalised as she, and implicitly the school, realises that she does not fit this priority of the schooling agenda. She is unable to fit in because the dispositions of her habitus are not harmonious with those of the school and more than that, she lacks the kinds of cultural and linguistic capital to be successful.

8.4 TOBY

Toby's case is interesting as he is the child whose prior achievement was most significantly misdiagnosed or misrecognised; his new teachers thinking that he was more capable than he turned out to be. After two weeks with Toby, Mrs Gardner had to reconsider her expectations concerning his mathematical achievements and future potential.

Andy What can you tell me about Toby?

Mrs Gardner I'm beginning to think that he's a bit of an isolate. He doesn't mix with the other lads. He's got quite a unique air about him, which could possibly lead to him being bullied in the future, a little bit...almost Victorian looking, I could imagine him...

Andy What is it that tells you that?

Mrs Gardner I don't know. He always looks very clean and tidy and the way he holds, his mannerisms, the way he holds his head, it's very sort of proper. He's just not got that rough edge to survive in comps that you need to have and I noticed that the first week I had him he was very reluctant to say anything for fear I think possibly...possibly as the youngest one he's been molly-coddled a little bit...I don't know. I don't think that the Sharps do expect too much of Toby. I think they realise that their three kids are individuals, which I think is great. Their Mum already said to me that Toby is very different. He's a really sweet boy. I do worry about him though. She said I have no worries about James other than that he is bone idle and probably won't achieve his full potential, although I think he will actually. So no I mean I don't think that they have set too high expectation of him. I think they are a great family and they just want the best for their kids and I think it's really sad that they have had the traumas that they have had with Hannah.

That Mrs Gardner should talk so much about expectations is interesting. This is the only place where this kind of discussion was had with a teacher and Toby is the only child whose parents insisted, reiterated here by the teacher, that they just wanted their best for him. In the same way that I questioned the limits of that 'best' Mrs Gardner unknowingly went on to express the same idea of limitedness:

Andy What could you say about his mathematical ability? Do you know what he got in his SATs?

Mrs Gardner I guess he's not as able as I thought he was going to be. I guessed he'd be sort of a high level five, and possible he may just have scraped a 5 or be a good 4. I don't know.

Andy Have you got his results?

Mrs Gardner No, but I know that through the way the groups have been split up he's not in the high flying group so the likelihood is that he got a 5 but not a hugely successful one but I mean 5's good anyway I think at their age...

There is a sense that even though he might not be a 'high flier', a level five would be very respectable. I decided against telling her that he actually attained a 'low' level four, but the impression was that such a level would have been below the allowable limit for 'best'-ness. Even after downgrading her expectations of Toby she was still rather over-optimistic. Mrs Gardner's questioning style resulted in Toby not answering many questions in class discussion so she didn't have that kind of information with which to make a more accurate assessment. However, even if she had done, she would probably still have maintained over-high expectations, as Ms Black did during the pre-setted three weeks of term. I have described the very ordered classroom that Ms Black maintained and during the first few weeks when Toby was in her class, the same tutor group as Matt, she did indeed get a more accurate impression of Toby's mathematical

ability from his work in class. However, she still tended to think that his relatively poor initial performance was due to lack of confidence rather than lack of ability:

Andy You said you thought he lacked confidence.

Ms Black Yes

Andy Did you still think that at the end or do you think it was something else?

Ms Black No, I still did by the end of it, and I noted there were a couple of times when he got upset because he couldn't do it and he said you know "I can't do it" and I said "well I am sure that you can do some of it, which bit of it", "all of it, I have no idea what you're talking about, I have no idea what we're doing", and erm...Yes, so I think after that, that was like the first lesson, I made a point of every time I explained something, he was the first person I went to just because I knew that if he didn't get it or if he got himself worked up...

Andy So why do you think he was lacking confidence rather than he just couldn't do it?

Ms Black Because when you actually spoke to him and talked to him he'd say "oh yeah, yeah OK".

Andy Do you know that he understood or do you think that he was good at making you think he understood?

Ms Black Oh, I don't know.

This is most intriguing, as it appeared that the combination of prior family knowledge and Toby's learned response to help, led to an ongoing overestimation of his mathematical potential. Toby's "oh yeah, yeah ok" is possibly a face saving mechanism that he learnt in those uncomfortable extra maths sessions at home with dad. Whether or not this is the case, there were mechanisms functioning here that led to all of his teachers overestimating his mathematical potential. Mr Newcombe, who shared the newly setted middle group with Mrs Gardner, supported Toby in a similar way to Ms

Black. His initial impression of Toby as "very bright but a bit of a slow starter" shaped his subsequent work with him. He explained how there are a couple of children who he would go to immediately after setting the work to check that they were getting on: Toby was one of them. When I asked him whether this was a reflection on Toby's mathematical ability he explained that it was more to do with concentration than ability. Mr Newcombe had no prior knowledge of Toby's siblings other than what he has been told by his colleague, Mrs Gardner. He had surmised that Toby came from a supportive, middle class family, and he acknowledged, as Mrs Gardner did, that his appearance contributed to that judgement. He also described how he had a discussion with Toby about the origin of his unusual (real) name. Mr Newcombe noticed that Toby connected with his sense of humour and acknowledged that this was a criteria whereby he 'warmed' to certain children in his classes, i.e. those who have a sense of humour more like his own. Bourdieu considered "style, taste and wit" to be the *sine qua non* of "the cultivated classes" (Bourdieu, 1974, p. 39), and a means whereby the school system, in particular teachers, could identify their own, the culturally well-endowed. McLaren (2003), writing about the theoretical usefulness of cultural capital, reports a similar experience to that of Mr Newcombe in his teaching:

> When I worked with students in my suburban ghetto classroom, those whose cultural capital most closely resembled my own were the students with whom I initially most comfortable, spent the most instructional time, and most often encouraged to work in an independent manner. I could relate more readily and positively - at least at the beginning - to those students whose manners, values, and competencies resembled my own. (McLaren, 2003, p. 94)

I have already shown above how Ms Black identified with Matt in a similar way, and although the criteria here are different all of the teachers had such implicit criteria

whereby they valued certain behaviours and attitudes over others. They were of course, as officials of the school system, valuing certain forms of cultural capital over others.

By the end of the term Mr Newcombe was still finding Toby somewhat frustrating and there was still a conflict in his own mind between what he thought Toby should be capable of and the progress he was making. In one sense, this high expectation could have been helpful and was probably influential in ensuring plenty of classroom support for Toby. On the other hand, those high expectations, or the sense of a lower limit to what was acceptable, could have a further alienating effect, as shown through the high expectations of Toby's dad and his primary teacher:

Mr Newcombe	Some kids I've got a real soft spot for and I still find Toby really hard work, to gauge him and know he's doing some work, to push him on.
Andy	Is it that you don't have a clear picture of him or is it that your picture of him doesn't fit with the reality?
Mr Newcombe	Er...I think he ought to be very switched on and very on the ball and very...because of the judgements I've made about him, for whatever reason, I think he should be very capable. And it always puzzles me that he doesn't show as much interest as he could...I expect him to be much better.
Andy	So you feel that there is a sense of struggle there somehow in terms of where you want him to be and where he is but you're not getting that with other children.

In the same way that I noted a similarity with his parents' and Mrs Gardener's use of 'the best' for Toby, here we have another similarity with Mr Newcombe referring to Toby requiring a 'push', as his mum did. This push is necessary as it is assumed that he

is not doing his best, and the evidence for this is, in part, knowledge of his siblings and other subjective judgements about Toby's background.

Toby didn't do very well in the first of the mathematics unit tests (scoring in the third quartile) but still Mr Newcombe is optimistic and compensatory:

Mr Newcombe I was surprised...he is bright. I think he was lazy, didn't revise, had a "why should I bother" attitude...Toby is sometimes slapdash. Not that he doesn't care but he is lax, he make silly mistakes. They are not drastic calculation errors and he's not going to move up or down. He's just coasting and if he'd put the effort in he could be up near the top of the group. He'll pretend that he isn't disappointed

Yet again there was the sense in which Toby's performance was assumed to be due to a lack of effort or engagement. I asked Toby what he thought about his result:

Andy Does it matter to you that you think that you haven't done well?

Toby I am if it goes in my report.

Andy Is that because your mum and dad will see it?

Toby My dad! He loves maths, he reads books like this thick.

Andy Will you tell them?

Toby My mum...and she'll probably tell my dad.

That his dad should find out his result and be disappointed was a major consideration for Toby. He reminded me of his dad's mathematical interest, and concluded that the result was "rubbish", the implication being that his dad would think it was not good enough, less than his 'best'.

Andy Do you think he is disappointed with how you do in your maths?

Toby I wouldn't say disappointed but he thinks I can do better.

Andy Do you think that you can do better?

Toby If I could be bothered yeah.

Andy Why can't you be bothered?

Toby Cause it's either first or last thing of the day and since I don't really enjoy it. I can't be bothered.

Andy Do you feel you can do it well enough to please your dad?

Toby No.

Andy How does that make you feel?

Toby It doesn't really bother me as long as he doesn't find out.

Toby has this sense that despite the family's high expectations, he was unable to meet them and despite his assertion to the contrary he does reflect a sense of family disappointment. We also see here Toby's response to this pressure: "I can't be bothered". By mobilising this learnt and strategic behaviour he can maintain ambiguity about whether he can meet their expectations or not. If he worked harder he reckons that he could probably meet their expectations, but by not trying he avoids taking the risk of actually proving that he is incapable of meeting those requirements. So Toby is trapped between a rock and a hard place: he cannot meet family expectations unless he tries his best but if he tries his best and that isn't good enough he has no other excuse. This way he can keep his parents, and the teachers, guessing. This process has been described by Covington, Spratt *et al.* (1980) as,

> The double jeopardy of expending effort when risking failure, a drama in which students must thread their way between the threatening extremes of too much effort - to avoid inference of low ability - and no effort at all - to escape teacher punishment. (Covington et al., 1980, p. 727)

This is very similar to what I have described above with the notable difference that their analysis is bound by the classroom ('teacher punishment'), whereas I would argue that the family effect is as strong, if not stronger, in structuring Toby's response to the expectations placed upon him. More recently Covington (1992, p. 75) repeated this analysis with an increased focus on the risk taken by the student: "trying hard puts students at risk because a combination of studying hard and eventual failure is compelling evidence for low ability". Toby carefully threads his way along, trying to minimise the risk by retaining a level of ambiguity about his 'real potential'. So in a sense both Mr Newcombe and Toby's mum are right in suggesting that he might do better if pushed but they have misrecognised his lack of effort as laziness rather than strategically intended. Their pushing must also be resisted by Toby if he is to retain that ambiguity about his 'true potential'.

In both Mr Newcombe's and Mrs Gardner's lessons Toby appeared lethargic and unimpressed with having to work. He could never be described as looking enthusiastic and he often lolled across the desk, only ever managing to raise his hand with his elbow on the table. On the occasions when he did seem to come alive it was normally to attract the attention of his peers, often with some silly behaviour. In one lesson he stuck a piece of paper to his bottom lip and looked very seriously at those around him, eliciting an amused response from them: more of the "laughter of resistance" (Woods, 1990, p. 215) seen in year six. Later on in the same lesson, Mrs Gardner pointed out that it was that last mathematics lesson until after the half term break, to which Toby punched his fist in the air and utters a measured "Yeah!" The teacher was unimpressed.

When I interviewed Toby early in that autumn term he did express the opinion that everything was "pretty boring". Partly that was due to the fact that there was nothing to do at break times and the lunch queue was long and disorganised in the first few weeks. He seems to have been shifting friendship groups, wasn't spending much time with Matt and so this was a source of some anxiety. Mathematics was also proving frustrating:

Andy Right, maths is the hardest?

Toby Yeah.

Andy Why is it hard?

Toby Erm, don't know, I just don't get it sometimes.

Andy Okay, and how's that make you feel?

Toby Annoyed.

Like Matt, Toby had been watching the others in his maths class and had identified some of those who he thought were more and less able. This was partly through the games that Ms Black played with them and partly because, for example, Jimmy "never listens and when he is asked the question he is like, umm".

Some time later in the term Toby explained that he has hated maths for six years and it hadn't changed moving schools. He had not been enjoying Mr Newcombe's lessons, partly because he has been deterred from slouching. The problem solving exercises at the start of Mr Newcombe's lessons had been okay, but on the whole he preferred Mrs Gardner's lessons. Although he didn't really know why, it was probably to do with the way that Mr Newcombe challenged his attitudes more:

Toby Mr Newcombe is more strict and he doesn't let you doodle on the whiteboards. If you do it twice you get an after school [detention], which is a bit over the top, and he takes his maths sheets as like a treasure. He's like if

you draw on my maths sheets its like the only thing I have got in the world. I like some of the things he does though, when he explains things in a certain way instead of saying it in a boring maths way.

He appreciated the alternative explanations offered by Mr Newcombe but had a clearly expressed opinion that the normal mathematical explanations are, by their very nature, boring.

Throughout my research with Toby, his siblings were "present in the classroom in a shadowy, distant manner" (Delamont and Galton, 1986, p. 182), and having settled into the school I asked him whether he was aware of teachers having compared him to his brother and sister:

Toby	They haven't compared me but they know I am their brother.
Andy	Is that an easy thing to deal with or do you think that have any expectations of you?
Toby	I don't know cause my sister is really clever and my brother's not.
Andy	Your brother's not clever?
Toby	Well he is clever but he doesn't try as hard.
Andy	They are quite different aren't they?
Toby	Yeah and I will probably go my brothers way...cause my sister got 8 A* and 2As and me and my brother were like "what!" and we felt like our mum was going to compare us.
Andy	Do you think that your Mum will compare you?
Toby	Probably! I reckon I'll get all C's.
Andy	Do you feel that that would be OK to your Mum if you got all Cs and had tried your best?
Toby	No.

Here again is seen that foreboding cloud of family expectations, and the prediction that Toby would get all Cs is not only a recognition that he will not come up to standard, but also hints again at the notion of a lower limit for his 'best'. Despite not always being highly motivated, Toby's brother had consistently achieved highly, and so Mrs Gardner's expectation that Toby would fulfil his potential implied something nearer the sister's A*s and As than Toby's predicted C grades.

Toby: a post transfer sketch

Toby is interesting as his family habitus is in many ways concordant with the priorities of the education system and yet it has not worked to his advantage. This is partly as a result of the conflict he experiences within his family context. He is continuing to resist the structuring expectations of the family and the more he considers himself to fall short of their expectations the more he needs to disguise that apparent underachievement through further strategic disaffection towards the schooling process. So in effect, Toby's struggle with his failure to fulfil the family expectations spills over into his experience of school. His attitudes to mathematics lessons are unhelpful and although he is not overtly aiming to resist the school structure this is in fact what takes place, albeit in a more passive form than Marie. One of the ways in which he achieves this is through the strategic use of the "laughter of resistance" (Woods, 1990, p. 215), which has continued from the primary school.

However, counterbalancing this, although not necessarily to his advantage, is the tendency for all of the mathematics teachers to maintain high expectations of him as a result of their knowledge of his family or the way in which he plays their response to his apparent difficulties with the work. As I have said above the effects of this could go either way, further exacerbating the problem he has as a result of not considering himself to meet familial expectations, or enabling him to meet those expectations due to the partiality of teacher responses. Toby was the only student whose attitudes were consistently misrecognised, all of his teachers considered his classroom and assessment 'performances' to be a poor reflection on what he was capable of. The amount of support resulting from these judgements was of potential benefit to Toby. In this way, the school field is seen to favour a child with more cultural capital, compensating for the high risk of failure to maintain social position, by offering extra

support. Nonetheless, what has happened is that Toby has not performed well in the tests, but despite this, teacher expectations remain high. Mr Newcombe points out that Toby would not be moving mathematics groups. However, if he were near the promotion or relegation zones of the classroom assessment tables then it is easy to see how the teacher's subjective idea of Toby's potential might either save him from 'the drop', or enable him to move up.

The future is unclear for Toby. This implicit tension within the family and the fallout in his school experience could affect his future academic trajectory either way. Mrs Clarkson, his year six teacher acknowledged this, although she explained this situation in terms of his friendships. In one sense that was correct as the friendships that Toby develops might well be critical in his school future. However the root causes of these peer group influences come as a result of struggles elsewhere. Like Matt, the peer group impact arguably comes into affect after the family and school effects. Unlike Matt, for whom all the fields have harmonious advantaging effects, the tensions in the family, and thereby the school field (e.g. through setting) will themselves impact the way in which the peer culture shapes Toby's future (e.g. in the friendships made possible after setting).

8.3 MATT

Matt was the only one of the four children who did not have to go through the unsettling process of having to get used to another set of mathematics teachers, although he was regrouped into the top set after 2/3 weeks. It was apparent very early on to Ms Black that he was very capable, and her initial high opinion of him continued throughout the term to when he got the top mark of 100% in the end of unit test.

I observed Matt's first mathematics lesson in the new school and he answered a range of questions thoughtfully and confidently. His was one of the few names that the teacher had learnt, and at the end of this lesson she suspected that he had attained "a high five" in his KS2 national test. Matt's initial impression of the new school was quite positive, but he did have some reservations:

Matt: I find it better than primary school, I'm enjoying it but sometimes the day seems as if they are dragging on a lot.

Andy Why's that?

Matt Because it gets really hot in the classroom and because we have to walk a lot of places you get exhausted from that and I don't know really, but with all different new lessons it gets harder.

Those early days involved a lot of positioning of other people. Who will be good friends, who is good at, and who struggles with, each subject:

Andy So who else is good at maths in your class?

Matt Well Ryan is, he knows his times-tables well and does maths well. I'm not sure, I haven't really been able to know them well enough yet.

Andy But you know enough about Ryan to know that he's good.

Matt Yeah,

Andy So is it just from answers he gives to questions?

Matt Yeah.

Andy And who's not good at maths?

Matt There's one called Charlene, who's come in new a few days ago. She admitted to herself, admitted to me, that she is terrible at Maths, because we had to play a board game and some of the questions that were on there like four minus six and she had to look, she took about two minutes to work it out.

Andy Yeah, is there anyone else that you think is not very good? Or, who you know struggles?

Matt Jacob struggles.

Andy How do you know he struggles?

Matt Because he seems to like talk a bit more in class, in maths because he can't concentrate too well.

Here, and elsewhere, Matt used various clues to map out his new social context. These included judgements of competence based upon oral contributions to the lessons, types of behaviour in the classroom, etc. They are different clues from the ones that Marie was using but they had the effect of positioning other children in the area that Matt is aware of and principally interested in, *viz.* academic 'ability'. If the habitus enables "meaning making" then it is clear that the strategic priorities of Matt and Marie reflect their primary interests, their goals for being in school, for life. For Marie, the concern was about positioning individuals in the peer culture as those who are 'geeky' or not, those who will comply to and those who will resist the norms. On the other hand Matt positioned those around him on the basis of their academic potential. His priorities were

significantly different from those of Marie and his desire to maintain a 'good' reputation was strongly dependent upon having teachers' favour.

In those early weeks Matt was unaware of the fact that he would be put into an ability group and he expresses a preference for all-ability classes. This was quite a mature reflection at this point, although I don't know the basis of his comparison when he describes all-ability as "better":

Andy Do you like working in a class where there are all kinds of different abilities?

Matt Yeah, I find it better, I wouldn't like to be in a class with all different really good people, or really bad people.

Andy Why?

Matt It just seems better to know that some people aren't as good as others because you know that they can improve and that they understand the ways but can't do it.

This perspective is in accordance with the generally caring, supportive attitude that he has towards his peers. Following the grouping process he explained his opinion further:

Matt It feels better to have some good some bad and some around the middle. It just doesn't seem right with all like people really good, it just doesn't feel right and I don't know why

In this respect he was experiencing tension due to the discontinuity between the practice of whole-group all-ability teaching at the primary school and the setting at the secondary. His use of *good* and *bad* is interesting, as his descriptions about having a good reputation in the primary school made it clear that this concern was as much about academic/skills excellence as it was about being a 'good' person.

Matt genuinely appreciated being able to help people who found the mathematics difficult. His mum had explained this in the context of helping his dyslexic stepbrother, but the same attitude shaped his view on the setting context. Moreover, he acknowledged that explaining mathematics to other people helped him to understand it himself. Having said that, he appreciated the challenges of his new mathematics group and the distinct styles of the two teachers. Within a short space of time he could compare and contrast aspects of their teaching and he expressed a preference for one of their teaching styles. However, this preference was linked to aspects of style in the same way that teachers will later be shown to make subjective judgements that leads to the favouring of one child over another (see Chapter 9). Ms Black appreciated Matt's good manners and work ethos, as being similar values to her own, and Matt's preference for this teacher over Mr George no doubt depended in part on a reciprocal sense of harmonising with the teachers values.

Matt impressed his two teachers, both in general terms regarding his attitude and behaviour and specifically concerning his mathematical work. He had gone a long way to establishing his good reputation in the new school. The following lengthy transcript explores the process by which Ms Black ascertained that Matt was mathematically able:

Ms Black I mean obviously when he first came into the class I knew nothing about it. I didn't even know if he was one of yours. I remember him answering a couple of questions quite nicely and being able to justify, proving that he knew why.

Andy And what judgement did you make from that. Can you remember what kind of judgements would you make from that?

Ms Black Well I just think that he'd answered questions quite nicely being able to explain it and justify it, some level of ability on that.

Andy What? Mathematical ability?

Ms Black I suppose primarily, but then I'd probably infer that he had, you know, general ability.... I mean just the fact that he could justify competently, means that it is going to be transferable, means that his language skills will be good and things like that.

Andy So you'd say he's got the general intelligence?

Ms Black Yes, I think I asked a couple of "do this on the white boards" or something, a couple of open-ended questions with the idea that the lower ability kids could give answers. We were doing function machines, how they have this input to the output, and he'd come up with quite a nice kind of solution and was able to justify why it had worked, so yes.

Andy So where did you go from that, when did you change your opinion of him?

Ms Black I think then, just automatically and then he was getting through work reasonably quickly and getting stuff right, so coping with what he was getting quite nicely, so then probably, you know, I think I did probably start asking him more in-depth questions and just paying a little bit more attention to him and a couple of others who seemed to be coping with stuff well, just taking a little bit of time out to say, right can you explain to me why you've got that, you know and looking at nth terms that weren't on the sheets but just a little bit more.....

Andy So you identified him as being more able?

Ms Black Yes.

She quickly noticed his 'nice' answers, which he could support with 'explanation', 'justification' and even proof. So recognition of this linguistic capital was important in her judgement. The manner in which he could talk mathematically apparently enabled this teacher to conclude that he must also have a good level of 'general intelligence'.

Ms Black unwittingly described the action of her own habitus as "automatic", and it is this natural, yet highly subjective, meaning making that I will examine in more detail later. Yet in spite of the fact that her judgements concerning his academic potential were accurate and derived in part from his work in the class, other judgements also informed that position.

Ms Black OK, well he's well presented, he's polite, he's got his uniform on and you know correctly not with trainers like, he's polite, got good manners.

Andy Good manners and polite, what do you draw from that?

Ms Black Just that he's been brought up well.

Andy Been brought up well...and what does that signify to you?

Ms Black Just that there is somebody in his life, whether it is his parents or whatever that are instilling some kind of values into him that, you know, that are taking time out to make sure, you know someone has prompted him at some point to say please and thank you and just generally be polite when you're talking to people. It's when he speaks to other people in the group as well, it's not just me.

Being "brought up well" is a positional value judgement, used in rather the same way that those with more educational qualifications, and thereby cultural capital, talk about how 'bright' their children are. Clearly, all children have "some kind of values" but not all have the same kinds of values that have currency in school. As such the issue concerning manners is an important one for this teacher, and on another occasion she explains why this is so important to her. Those dispositions were developed throughout her childhood and the result is that she is aware of the fact that she is likely to favour children who have similar good manners. On one occasion Matt approached her to explain that he had forgotten his book and her response to his polite apology was not the

typically terse rebuke but a simple "that's okay Matt". Although this was only one small incident each lesson is full of hundreds of such small incidents, the net effect of which is a preferring of certain attitudes and forms of behaviour. As McLaren explains:

> ...to many teachers, the cultural traits exhibited by students - e.g., tardiness, sincerity, honesty, thrift, industriousness, politeness, a certain way of dressing, speaking and gesturing - appear as natural qualities emerging from an individual's "inner essence." However, such traits are to a great extent culturally inscribed and are often linked to the social class standing of individuals who exhibit them. (McLaren, 2003, p. 93)

Ms Black and her mathematics teacher colleagues were actively engaged in this process, largely unrecognised by them, with all of their new pupils.

With such a positive relationship with the teacher and the priority that Matt has given to establishing his good reputation as a learner, both with the teacher and with those of his peers that have similar values, he made a successful start to the new school. By the end of the first term he had achieved 100% in the first two tests. He had established himself in the class and was evidently enjoying working with other similarly 'bright' and 'well-mannered', appropriately dressed children. The negotiating of his position in the peer group was clearly taking place during this time, but the peer group was not driving this negotiation process as it was in Marie's case. Rather, it was the values enacted from his family derived habitus, closely harmonised with the teacher and school values that shaped his response. Consequently, he made a good start, academically speaking, in the eyes of the school and his future prospects are promising. He stands to benefit greatly from the harmony between the school and family values, at the very least because it increases the chances of him developing positive relationships with the teachers. His mathematical progress appears to have continued where it left off.

Matt: a post-transfer sketch

Matt made the best transition to the secondary school, if by best I can be understood to mean the one that was most successful from the schools' perspectives. This was made possible because Matt's success criteria were very similar to those of the school. His desire to establish his good reputation has been fulfilled, both in terms of the teachers' recognition of his values, and regarding his success in the mathematics classroom. Matt's priorities for moving school were similar to the priorities of the school system itself and so it was easy for him to submit to its intentions and values. There is a strong sense of 'dispositional harmonisation' between him and his maths teachers and thereby the school field. He, out of that group of children, is the least likely to experience a hiatus in his mathematics learning trajectory in the two years following the transfer from primary to secondary school. This is due to his cultural capital and social background as much as it is do with his high attainment. Marie was a high attaining mathematician at the primary school but these two children have different learning dispositions due in large part to their different family milieu.

My earlier sketch highlighted how the three fields - family, school and peer culture - functioned together in a harmony that further strengthened the structuring of each, in a very positive way. In contrast to Marie (see below), where discordant effects of the fields created increase the tension in her experience of school, Matt's academic trajectory seems to have survived the transfer and even been relatively enhanced. The one concern from pre-transfer remains, that of his friendships. However, it seems that he is using the positioning power of the school to identify suitable new friends. So towards the end of the term, his new friend in the mathematics lessons turned out to be Josh Markham, Marie's archetypal 'geek'.

8.2 MARIE

The first time I saw Marie in the secondary school was after three maths lessons with Mrs Davison. It was Friday afternoon and she was the last pupil to arrive at the lesson. They had been allowed to choose their seats and she sat in the middle of the room next to another girl. She wore the permitted amount of jewellery with her blouse not quite fitting the school uniform requirements. She was eager to answer questions, even whispering answers loudly enough for everyone to hear. The teacher didn't know that it was her, but Marie knew that I knew and grinned in my direction, pleased with her achievement. The whole class was restless and Marie moved in her chair to the rhythm of a song that she mouthed to herself. She stopped to talk to her friend, whilst the teacher continued talking to the class and this went unchallenged. When the class were set off on a task Marie completed it very quickly and was equally as quick to announce to the class that she had finished it. She received praise from the teacher and was subsequently left with nothing to do for a while. These behaviours were predictable from her time in year six. She was enthusiastic, outspoken, had a tendency to shout out (or whisper out) and completed the task with a competitive drive. She positioned herself in the middle of the class and drew attention to herself through her attitudes and behaviour. She was already testing the boundaries of the uniform policy and in her avoidance of being spotted whispering the answers she was trying out her strategies for challenging the accepted 'rules', both explicit and implicit, for classroom teacher-pupil interaction.

Marie appeared enthusiastic, self-confident and clearly extrovert. She offered good answers to questions and so it was not surprising that Mrs Davison considered her to be

pretty good at maths and that "she probably got a level 5 in the SATs" (a correct assumption). Following a lesson early in the new term, Mrs Davison described how Marie was very keen to tell her that she had finished. This behaviour was construed positively as enthusiasm but this could equally have been a misrecognition of strategies intended to establish her presence in and control of the new peer group. When I suggested to Mrs Davison that this was typical behaviour for Marie the teacher acknowledged that "come to think of it, her sister was like that". This was the first glimpse of the teacher associating the older sibling's behaviour with that of the younger. This was explored further in a subsequent interview:

Mrs Davison Tina was very bright, but I think she wasted it. I think when I taught her she began to, in that year, began to be rather easily distracted from her schoolwork which was a shame as she was bright. She seemed almost rebellious in small ways.

Andy Who, Tina did?

Mrs Davison Yes, things like, uniform, appearance, turning up on time, just little things to be different.

Andy Do you see that same rebellious streak in Marie?

Mrs Davison I haven't looked for it, but I imagine if I thought long and hard about it, I can see it coming.

The similarities were clear and for Mrs Davison to say that she could "see it coming", without actually having to think "long and hard about it" shows that is was more clearly apparent than she would like to admit. Mrs Davison was insistent that she should not use prior knowledge of children's siblings to affect her response to newcomers to the school.

During the following week I saw Marie for the second time. Again she arrived late and sat in the same place in the classroom, but after ten minutes or so a boy was moved to sit next to her. This led to a confrontation with Marie. It began as a minor disagreement: she then pulled his hair, then threatened him and hit him. He responded with some quiet words and in response received a retort, "watch it, or you're going to get battered mate". The situation then escalated quickly and the teacher cut in to move them apart. Some time later Marie went outside to cool off and I talked to her about the incident. She found it amusing when I recounted her threatening phrases. This was the same attitude that I saw when she had avoided a reprimand for whispering out loud in the earlier lesson. Earlier I highlighted this confrontational aspect of Marie's character. Marie considers herself to be like her mum in this respect and drew attention to her mum's apparent involvement in similar conflicts:

Marie She came to this school. When Miss Harvey used to tell her to go in the shower my mum would go "I'm not going in the shower when you're there you f'in lesbian". And this girl, my mum always used to get into fights with this girl stamping on my mum's face with... d'you know the big boots they used to wear? So the girl got up and my mum got up behind her, picked up a chair and whacked it round the back of her head [Marie grins]. So she was about the same as me.

Andy Would you like to be the same as your Mum?

Marie Sometimes. Part of it yes and part of it no.

Andy Which parts?

Marie I'd like to be like her at school, tough and ev'rything

Marie was already displaying similarly aggressive physical and verbal behaviour in the classroom, and she described similar confrontation situations taking place outside of lessons.

So within those first two weeks the teacher had made an accurate assessment of her prior achievement. This was informed by Marie's classroom approach to mathematics and the teacher's prior knowledge concerning the older sister, for if there was a connection made between their behaviours the association surely has also been made as a result of knowing that the older sister was "very bright".

That second lesson, about two weeks into the new year was, according to Mrs Davison, "the first time she's called out and not put her hand up and come up with not strictly accurate answers, the rest of the time she's reliably good". However, I knew that it was her that was disguising her 'calling out' with loud whispers in the first week of the term. This trait that had got her into trouble in the previous year was reappearing. Also in that short space of time she had initiated an aggressive confrontation in the classroom and subsequently been sent out of the lesson, arrived late to lessons and been seen in uniform that was not compliant with the school's requirements.

Following that lesson the groups were rearranged and the next time I saw her was with Ms Black. In the meantime I met with Marie for our first post-transfer interview. Marie informed me that the food was indeed good and that she had already made a number of friends, many of them in year eight and nine. Several of her new friends were girls with behavioural 'problems' from other year groups and indeed Marie talked about the fights

that she had already seen and been involved in. As Day's (1996) research showed, "memberships which the student group prize tend not to reflect the priority of the academic learning" (p. 53). She didn't think that anything had been particularly difficult about starting at the secondary school and thought that the best part of the new school was lunchtime and school dinners, as expected.

Her self-assessment of her mathematical ability was that she would get grouped into the top group. She also considered her teacher, Mrs Davison, to be strict but she was not clear what she meant by that: my observations did not suggest that she had been at all strict with the class or with Marie. Marie also thought that Mrs Davison was a better maths teacher than her primary teacher, Mrs Clarkson. This perception, that the secondary maths teachers were somehow better, was shared by all of the children. Their evidence for this view was based more upon the notion that secondary subject specialists must *de facto* be better teachers, rather than on their experience, which might have suggested otherwise in some cases. Marie considered Ms Black to be better still than Mrs Davison, because she explained things better, but this preference was more likely due to the relationships that these teachers had with their classes.

Marie was put into the top group for mathematics, a class split between Ms Black and Mr George. Marie's propensity for lateness continued into these lessons and her 'dress' continued to push the boundaries of acceptability. After the first lesson with the new teacher, Ms Black explained how she had got the impression that Marie was a bit trendy (which is probably what partly informed Mr George's description of Marie as "street-wise"). She later recognised this initial impression to be due in part to the clothing that Marie was wearing.

Soon after the move to the top group Marie seemed to have lost some of the interest that she had shown in the subject at the primary school but she cannot articulate any reason for this. It fits with her general apparent disinterest in the academic component of school and might have been something to do with the increased competition inside the classroom and her increasing focus of attention outside the classroom. She had always been driven by the in-class competition with Matt and other high attainers. Now she was in a class where many of the children were as capable as her but they were also working hard. She did indeed "stick out like a sore thumb" as Mr George described.

> Mr George She's much more, she's more of a streetwise kid than the rest of them. Nothing desperate but she's more feisty, more ready to not be on task, more if, if you were trying to bring her round to get her on task more likely to be ever so slightly stroppy about it, just a bit more feisty.

He recognises her as a "bright-ish city kid" but doesn't consider her attitudes and behaviour to be affecting her learning at this early stage in the new school year. However, she was beginning to have quite a lot of time off school so that by the beginning of December she was averaging 25% absence per week and when I challenged her about this she got quite agitated and informed me that it was "CONFIDENTIAL...as you say it". Due to the nature of the split class, Mr George had probably not noticed this – only teaching the group once per week. Missing a quarter of the maths lessons would have a serious impact and this attendance problem was no doubt rooted in her dispositions of disaffection. So it was that she happened to be absent on the day when her maths group completed the test for the first unit of year 7 work. Her friends subsequently teased her about having 'skived' but with a grin she denied it. Bourdieu (1999, p. 128) argued that, "at the risk of feeling themselves *out of place*, individuals who move into a new space must fulfil the conditions that that space

tacitly requires of its occupants". However, for Marie, who seems to revel in risk taking, there is little anxiety about fulfilling the school's conditions, as she is not apparently worried about being *out of place* there. Her sense of place is much more strongly associated with her peer subculture and it is there that she makes the effort to fit in, through her behaviours and associations inside and outside of lessons. For this group, being "out of place" regarding the success criteria of full inclusion into school, is a condition of being "in place" in the group.

Just as her teachers had formed clear impressions of her, she has formed judgements about her two teachers:

Marie	Mr George is mardy 'cause he's always, he doesn't let you speak, but Ms Black does. She's all right.
Andy	So you like Ms Black?
Marie	She's ok.
Andy	I noticed when you walked into her class the other day you stuck two fingers up behind her head. ['rabbit ears']
Marie	I'm always like that. Did you, did you notice? I always do that to teachers when I'm mucking about. Every time I do I say "Hello Miss" and I do that behind their head.

On this occasion she hadn't noticed me observe this behaviour whereas she was normally very aware of happenings in the classroom. When she misbehaved she had a strong awareness of where the teacher was and whether she might be caught. She was adept at hiding her misdemeanours and in that sense displayed considerable intelligence and cunning, dispositions that might fall under Mr George's definition of 'streetwise'. She was also quite happy to play the teacher along:

Andy So what else can you tell me about Mr George?

Marie He talks dead complicated. He's weird.

Andy In what way?

Marie I don't know. He goes "do you get it?" and I go along with it like I do get it but I don't really.

And on another occasion:

Marie Decimals that we were doing with Mr George the other day 'cause he was talking a load of gibberish and I didn't understand him, but I just like pretended I did.

Andy Did he find you out?

Marie No.

Andy Did he ask you any questions that you couldn't answer?

Marie No, 'cause I hide.

Andy What? Behind someone else?

Marie No I just sit there pretending I don't know the answers.

Andy Do you look at him when you are pretending or do you look somewhere else?

Marie I look at my book like that and pretend I'm doing something.

Andy He never tells you to stop doing that and look at him?

Marie No not really. He's asked me questions before and if you don't get it in a certain amount of time then he just passes on so I just don't say anything.

It is possible that Marie's narrative here is for effect, to portray an attitude that is desirable rather than enacted. However, classroom observation and analysis of her dispositions validates her explanations. These strategies are thought through and despite them requiring some rather daring bluffing they appear to work, that is assuming that one's aim is disengagement. In contrast she also worked out that if she misbehaved in Ms Black's lessons then the teacher would stop asking her questions. That Marie

could differentiate between the two teachers, within a few weeks, and find strategies for face-saving rather than the embarrassment of answering questions incorrectly was impressive. Here she demonstrated further the strategies of resistance that were evident in the primary classroom. She had an awareness of many of the unspoken rules of the classroom and was developing her own strategies for subverting some of them.

In Mr George's lessons she grouped up with some girls that were also footballers. She was adept at positioning people and showed considerable dislike of 'geeks'. Part of the process of positioning herself socially was befriending girls from the higher years and distancing herself from the kind of people that she had to sit next to in Ms Black' lessons:

Andy	Ok now in Ms Black's class you sit next to Josh, Josh Markham is it? What can you tell me about him?
Marie	[pulls a face] He's annoying
Andy	Why is he annoying?
Marie	'Cause he's a geek
Andy	He's a geek. What makes someone a geek?
Marie	When they're too clever and they know ev'rything and they're goody too shoes and they've never been naughty always good...good little boys and girls.
Andy	So can you tell he's a geek without talking to him?
Marie	yeah
Andy	from what he looks like?
Marie	Yeah
Andy	What does he look like then? Can you describe what it is that makes him look like a geek?

Marie The way he walks, the way he talks.

Andy How does he walk?

Marie Always walk dead straight and...like this [she gets up and does an impression]

Marie was not only quickly developing strategies for dealing with the unwelcome challenges of lessons, but she was rapidly finding and associating herself with a group of children who shared her non-conformist stance. That group did not accept 'geeks'. Moreover, that process was not simply the attraction towards a certain group but also repulsion away from another group. She can clearly describe the 'geek' factor and was adept at making quick judgements about her peers on the basis of dress, bodily hexis, speech, and so on.

At lunchtime Marie "hangs around" with a group of girls with common interests: "boys, walking around and...music...'RnB' and 'garage'". Image was clearly important in the establishment of this new secondary school identity:

Andy Do you choose what to wear when you come to school?

Marie Yeah, as long as it's something black, or blue, you just wear it.

Andy So you just pick anything black? You don't wear a school sweatshirt though.

Marie I don't wear a school jumper or that either [pulls at blouse] or school trousers.

Andy Why not?

Marie Cause I don't like them. They're disgusting. They make you look like idiots. They make you look like a load of smart geeky kiddies.

Andy You wouldn't want people to think that you were a geek would you

Marie NO! And people who join the choir...that's disgusting.

So the reason for the uniform variation was partly to do with belonging to the group which tends to have attitudes that are antagonistic to the ethos of the school, and not those who are conformist 'geeks'. This was a visible sign both to attract and to repel other groups of peers. The idea of being in a choir was abhorrent to Marie, in keeping with her dislike of classical music, and those who sang in it were evidently 'geeky'. Although I have not included them here, the two lists of names, Marie's female friends and the girls who have joined the choir, broadly represent two cultures. The choirgirls had more traditional, white, middle-class names and Marie's friends' names were a blend of names with origins in the working classes or other non-traditional cultures. The differences are striking and further highlight the strong desire that Marie displayed in almost every aspect of her introduction to the secondary school to be different, to challenge the school expectations and to position herself socially and behaviourally with those more like herself. A high proportion of the children in this group had similar social backgrounds, many coming from the same city district as Marie. Epstein (1983) asserted that,

> If students select their friends from a pool of students who are already similar to themselves on many characteristics, then their apparent influence is really a function of prior socialisation by families, schools, earlier peers, demographic characteristics, geographic boundaries and other factors. (Epstein, 1983, p. 177)

This analysis reflects the broad thrust of this thesis concerning the complexity and harmonisation of influences upon children's dispositions, but from my theoretical perspective I am most interested in the relationship between this peer group and Marie's family and social milieu. Epstein described the "dynamic process of selection, interaction, influence and reselection" (p.198) of such friends but the agency of the child here is more influential than the structures, both objectively in the peer and family

fields, and subjectively embodied in the habitus. What I am describing here is a much more structured, strategic approach to positioning in the peer group.

Marie's non-conformist behaviours were quickly becoming more pronounced than at the end of the primary school and were going largely unchecked in the mathematics lessons. That was not for want of trying on the part of the teachers, as Marie's behaviour was incessantly disruptive, albeit usually in a mild way and this was clearly having an impact on her mathematical progress.

Through the term Marie increasingly became "a bit of a pain" in Ms Black's lessons, calling out answers, talking while the teacher was addressing the class, not completing homework and so on. It seemed highly probable that this would continue and possibly worsen. The resistance to, and marginalisation from, the education process, as at the primary school, was misrecognised simply as poor behaviour and organisation. What can be seen from Ms Black's description, and elsewhere, is the perception that Marie was falling into bad company and lacking the kind of behaviour necessary to do well. What has happened in the move between schools is that Marie appears to not like school any more or less – she was not that keen in the first place – but now the potential for subverting school norms was multiplied and the social stakes had been raised. These stakes were worth far more to Marie that the apparent benefits of complying and achieving academic success. So Ms Black's metaphor of having *fallen* into *bad* company does not acknowledge the strategic choices that Marie made to seek out, and be sought out by that group.

Marie: a post-transfer sketch

It is clear from the evidence that the dispositions that were seen in her attitudes to work and her peers in the primary school have not changed. Rather, as the relative influence of the fields has changed, with school taking a different role, Marie has been free to adopt a more openly antagonistic position to formal aspects of the schooling process. This was effected principally through her seeking out, and being found by, a peer subgroup with which she had harmonised dispositions. For Marie this peer group's positioning effect was one that increasingly created tensions in her experiences of the curriculum and the informal, social cultures of the school. Bourdieu explains that.

> It can be seen that the influence of peer groups ... is very much a function of the social class of the children - reinforces, among the least privileged children, the influence of the family milieu and the general social environment. (Bourdieu, 1974, p. 34)

Marie is not really amongst 'the least privileged' children, but when compared to the dominant school culture her relative disadvantage, in terms of possessing different cultural resources, has precisely the effect that Bourdieu here described. This is not to say that only the peer group influenced her because the schooling system itself further exacerbated her alienated position. If the peer group tended to pull her away from the acceptable, valued dispositions of the school system, then the system pushed her away in reaction to her resistance the school's espoused values and enacted behaviours.

Through all of this the effect of the family was evident. I described earlier something of the experience of Marie's mum in this secondary school and that same sense of conflict, which was also part of her dad's experience, is clear in Marie's account. Even within a few weeks, Mrs Davison had noticed a pattern between the older sister's

rebellion and that of Marie. The teacher had noticed similarities between the siblings and Marie herself was drawing a comparison between her mum's confrontational behaviour and what she would like to become.

The prognosis made by the primary teacher seems to have been accurate and this has impacted the academic progress that has been made at transfer. More importantly, Marie's resulting academic trajectory was negatively impacted indicating and increasing the likelihood that she would not fulfil her academic potential over the course of her time at the secondary school.

The teachers were able to accurately ascertain her National Curriculum test level, but in a short space of time were also expressing concern about her behaviour and attitudes. Mr George's description of Marie as a "bright-ish city kid" was also accurate but despite his professed concern for the 'underdog', which arguably Marie was in this suburban comprehensive school, he is unable to connect with her. It seems that he also is being structured into the priorities of this predominantly middle class school.

8.6 SUMMARY

The case reports and 'sketches' presented above have been constructed with the aim of enabling the reader to see how the dispositions of the children and teacher habituses structure their strategic responses to the move to the secondary school. I have described the strategic actions of the individuals and have related those actions to the invisible yet powerful structuring of the three fields framing the study: family, school and peer culture.

The impact of the three fields over time have had very different effects, which can be very briefly summarised as follows:

- For Matt the three fields work in strong harmony to enhance his academic trajectory whereas for...
- Stacey it seems that the three fields have the opposite impact of further marginalising her within the school and peer culture.

For the other two children, Toby and Marie there is resistance and struggle between these fields and their effects but this occurs at different places.

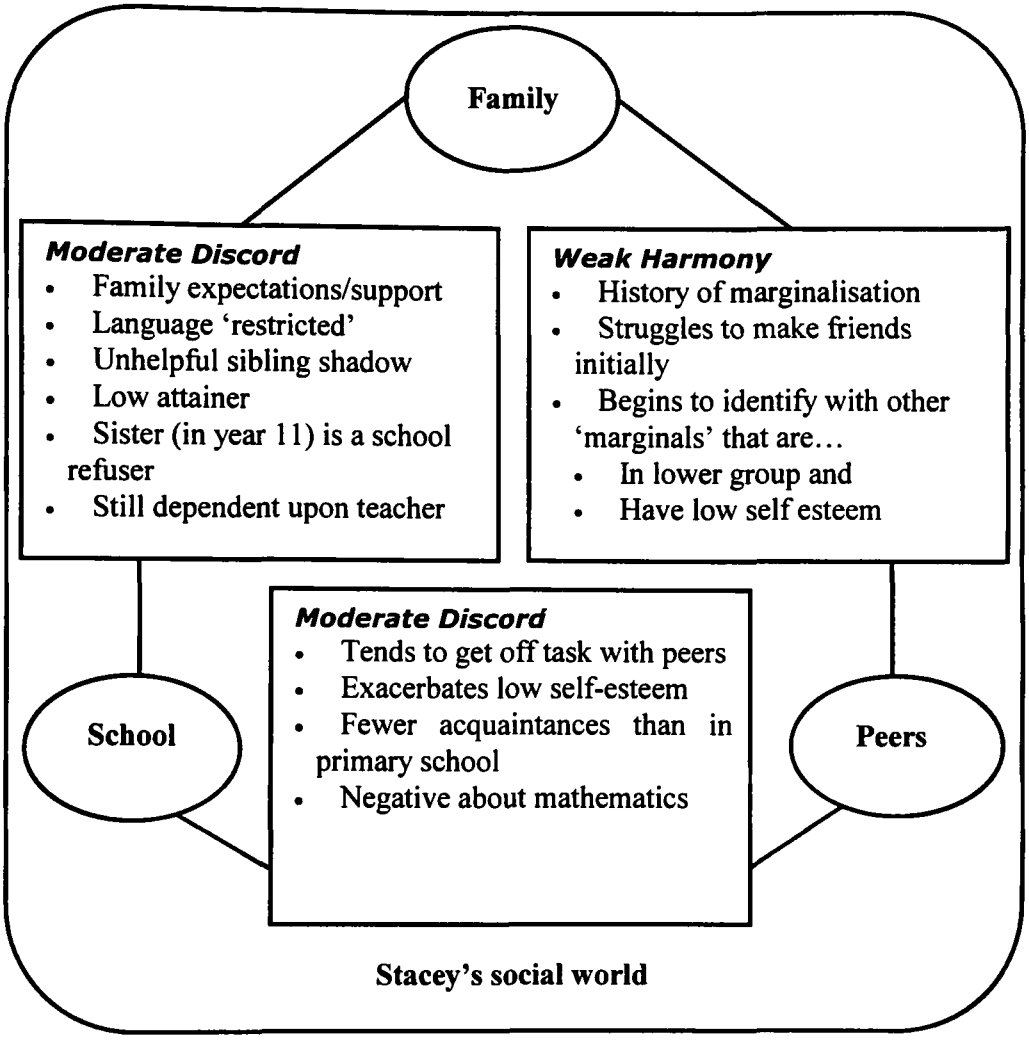
- In Marie's case the influence of the social background, or more specifically her family, harmonises with her position in the peer culture and these act in resistance and contradiction to many of the values of the school. The net result is of an academic trajectory that is not as steep as her attainments in the primary school suggested were possible;
- Toby's struggle is much more localised in the family expectations, including their notion of 'best'-ness, and this has had a knock-on effect to his responses to school. The impact of these two will in turn effect his position on the peer group, and might

well lead to further conflict between his family values and expectations and those associated with his new position in the peer group. The future for him is unclear and is very dependent upon his future resistance to family expectations.

One of the major structural changes in the move to the secondary school is the expansion of the peer cohort, in this case from around 60 children to approximately 260. At the same time the children are mixed up into form groups, setted into maths groups and so on. For each of these children one of the major effects this has is to increase the number of children positioned similarly in the social space, which reduces the need to fit in with a more diverse peer group. So the peer group and sub-groups are becoming more influential by virtue of the fact that they get bigger and can therefore define their boundaries more clearly. School transfer is the first occasion on which children can properly reposition themselves in the peer group and for these children they tend to 'move' towards other children with similar capital resources.

In order to make more of this movement I will now reconstruct the field maps for the four children as they have evolved by the end of first term in the secondary school. My data for these mappings are taken from mathematics lessons and interviews so I am not purporting to represent anything more than that, although the diagrams probably have considerable applicability beyond my use here.

Figure 8: Field map for Stacey (post-transfer)

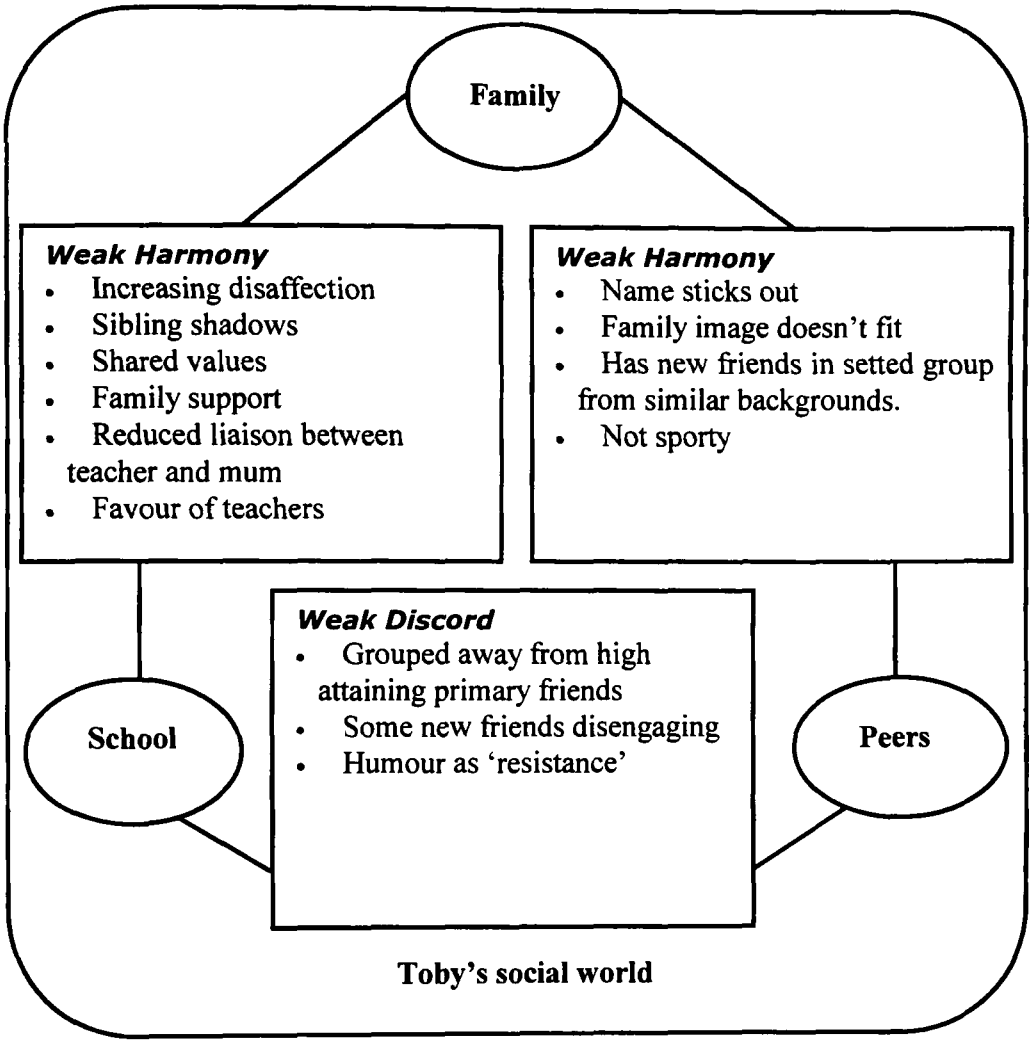


Explanatory notes:

What had seemed a fairly stable situation prior to transfer has undergone a subtle shift. Stacey is showing increasing disaffection towards school and is, partly though the setting process and partly as a result of being in a larger cohort, beginning to locate herself in a group of similarly marginalised pupils. Her mum has low expectations of her and she is increasingly antagonistic towards school, and learning mathematics in

particular. As a result there is an increased sense of discordance between her experience in the family and peer fields and what is demanded of her by the schooling system.

Figure 9: Field map for Toby (post-transfer)

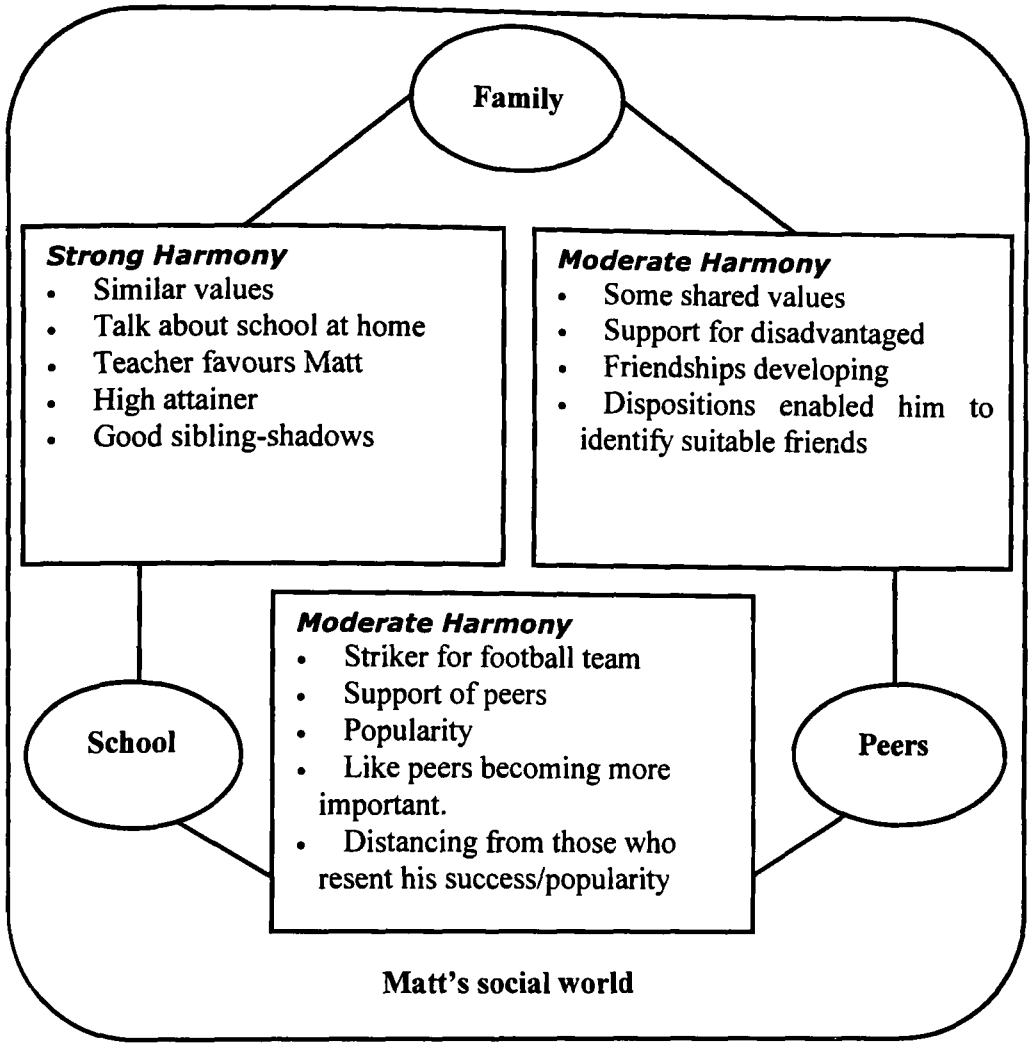


Explanatory note:

For Toby, the setting process, and indeed the larger process of moving schools, has moved him away from those peers that he had wanted to remain with. He has less of a relationship with his teachers and the loss of contact between school and family has enabled his to make his disengagement from classroom learning more effective. As a result he is identifying with other boys who, for whatever reason, are resisting the high expectations placed upon them. The very strong link between family and school

priorities that was clear before the transfer has been weakened. This has enabled the peer field to have a greater influence upon Toby. When this is combined with the fact that he has been grouped with more middle attaining children, the dispositions of those now nearest to him in the peer field are somewhat at odds with those of his family and of the school. So overall there is a change in position in, and positioning by, the fields and what was strong harmony between the family and school is now more moderate, with increased discord between his new found peer position and the school structures.

Figure 10: Field map for Matt (post-transfer)

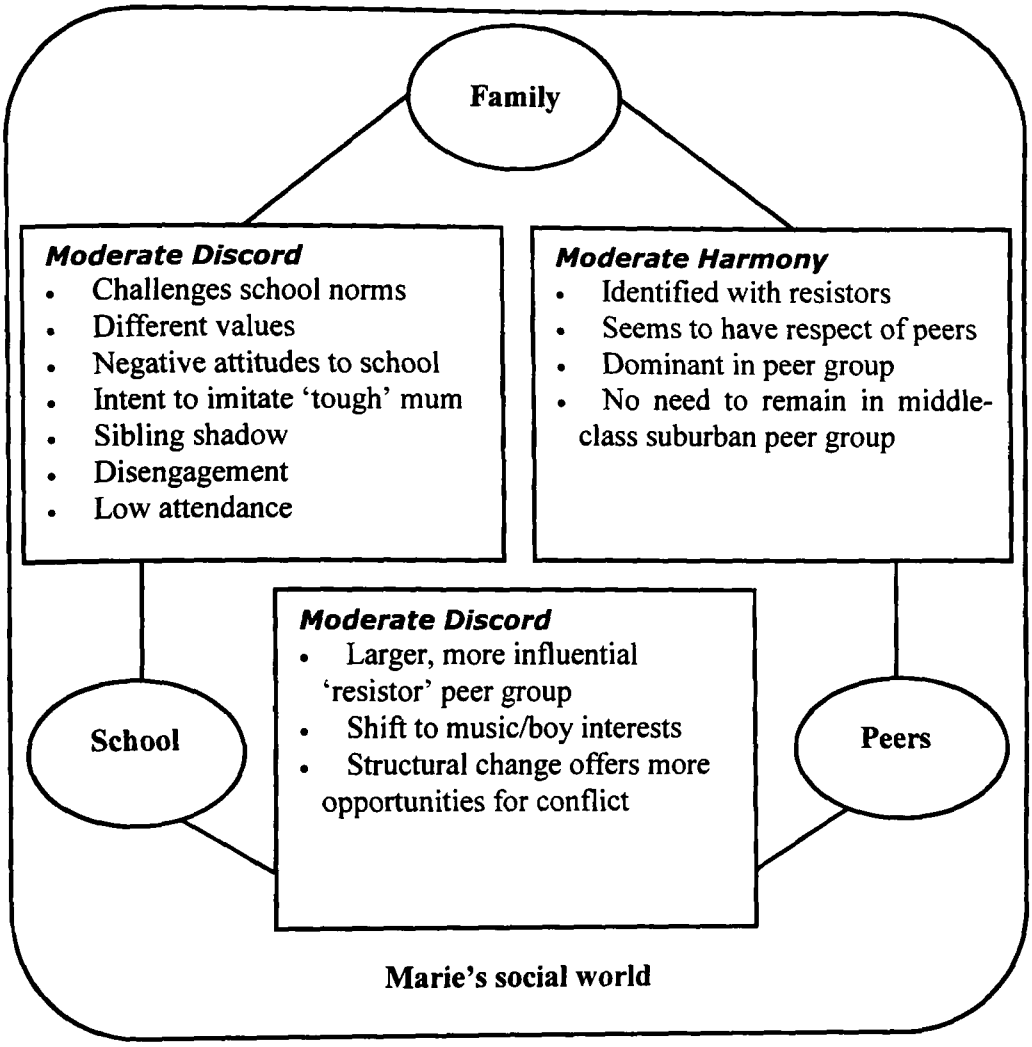


Explanatory note:

As expected, the expansion of the peer group, and the process of setting, has positioned Matt amongst more children who share his values of hard work, good manners and the striving for a 'good reputation'. Consequently he has found himself in an increasingly harmonious position in the three field spaces in which he lives. This has enabled him to not only make a good transfer to the secondary school but he has benefited from the

move. The three fields position him in similar ways and so reinforce the effects of one another. In locating himself with peers with similar social backgrounds, dispositions and values, what was the relative weak link between family and peer fields has been strengthened.

Figure 11: Field map for Marie (post-transfer)



Explanatory note:

Marie's social world is shifting, with increased value placed on the peer culture. This is particularly the case as she finds, and is found by, those of her peers who share her resistive dispositions. This peer culture has, by the opening up of a larger group of older children, had a knock on effect by increasing the discordance with the schooling field. The shift of power resulting from the harmonising of family and peer fields is set to continue and this new social network positions her in increasing opposition to the

school system. So she is structured in a disadvantaged way from the perspective of her ongoing mathematics learning trajectory.

SUMMARY (continued)

The four social space diagrams above indicate where there have been changes in the children's relationship to the three fields examined: school, family and peer group. I have used weak, moderate and strong to identify for the reader where the changes have occurred but such terms are clearly imprecise and my use here is largely to identify relative influence and change over time of the three fields.

Of the four children only Matt has made a fully successful transition in regards to his learning of mathematics. He is the only child who has not described his mathematics lessons *per se* as boring and this fits well with the findings of Galton Comber *et al.*(2002) that only high attaining boys do not have mathematics on their list of subjects not looked forward to at transfer. Bourdieu describes mathematics as one of the 'talent' subjects, whereby he describes what is popularly assumed to be the prerequisite for success, namely 'natural' 'talent'. I highlight both *natural* and *talent* here because, as is clear from this cultural capital perspective, mathematical high attainment is not a function of nature or of talent, but of cultural inheritance. Bourdieu and Saint-Martin explain further that:

> ...it is hardly surprising that 'talent' subjects, which offer the best investment for cultural capital...and for the easy relationship with culture, which can only be acquired by informal exposure to it within the family, attract pupils from a higher social level than those subjects which give working class and particularly lower middle class children a chance to show habits of dedication and industry which, in such subjects more than elsewhere, can fulfil their compensatory role. (Bourdieu and Saint-Martin, 1974, p. 347)

Of course this did not apply to Toby who, despite his considerable cultural resources, was not a high attainer. However, this analysis gets to the heart of Bourdieu's (1994)

'genetic structuralism'. This is the process whereby the development of intellectual 'ability', commonly understood to be a function a person's genetic make-up, is in fact a misrecognition of the process of family structured and structuring enculturation, into particular ways of thinking, talking, acting, and so on.

The next chapter uses these case reports, as well as some further data, to examine more closely the teachers' role in the post-transfer structuring of these children's mathematics learning trajectories. It will become clear that the strategic dispositions that have been seen in the case studies of the children work together with the (mathematics) teacher dispositions and strategies to strengthen the process of social relocation that takes place in the move.

9. DISCUSSION

This chapter draws the empirical data together from two different perspectives. Firstly I will develop a model that explains further, and from a teacher perspective, the mechanisms whereby children's mathematics learning trajectories are altered following school transfer. However, due to the imbrication of the fields, it is clear that the teachers, children, families and the peer group all contribute in overlapping and complex ways to structuring these mechanisms. Four areas of influence that shape the dispositions and judgements, and thereby the actions, of teachers are identified and examined: historical, mathematical, attitudinal and capital. In the same way that the fields intersect, so these layers of the model are overlaid and intertwined. The combined effect of these four layers of action and interaction renders the notion of 'fresh start' a mere chimera. Social currents flow strongly under the surface of transfer processes.

Having considered this model, which will be based upon the empirical work reported in the previous chapter as well as further supporting data from the case material, I will return to the learning landscape metaphor to identify the differences between these two places in which children learn mathematics. It is evident from the case reports that the similarities of the two landscapes' are more influential than their differences and further consideration of this concludes the chapter. This is in the form of discussion about how the children's position and movement on the learning landscape can be described.

9.1 A MODEL FOR POST-TRANSFER RELOCATION

I now want to draw some of the case study material together in a model for exploring how social currents flow through, with more or less disruption, the transfer process, and how teachers and children act together so as to largely reproduce children's social positions in the new context. Moreover, this analysis demonstrates how social and learning trajectories are defracted at transfer, in a similar way to how a prism defracts or splits light (see Section 10.2). I will refer back to material that has been reported in the accounts of the previous chapter with only minimal additions here. The layers of the model can be seen in Figure 12, and in this introduction I will explain the diagram before moving on to consider each layer in more detail.

Following the move to the secondary school the new mathematics teachers quickly formed impressions of the children, both concerning their mathematical ability and the kinds of social backgrounds that they came from. They could, as has already been shown, in most cases accurately identify KS2 test levels within two or three lessons. As explained in Chapter 4, this was one aspect of the study that had been unexpected but became a major aspect of the post-transfer fieldwork. Much of the early interviewing with the teachers was framed by this research question: how did they manage to come to such accurate judgements in such a short space of time? What readily available information were they using, if they were aware of it at all? If they were not fully accurate in their estimations of prior attainment, why not, and who did those inaccurate 'guesses' benefit and disadvantage? The importance of this is highly significant when there is a teacher recommendation component integrated into the grouping process that

happens after the first few weeks. As such, those initial teacher judgements and recommendations affect the mathematical futures of children.

My analysis begins with the *historical* category as it was clear that teachers were often utilising historical data of siblings, what might be termed "sibling shadows" (Delamont and Galton, 1986, p. 182), and sometimes teachers were guided by this data despite their expressed intention not to be so influenced. This category also includes the school-transferred data, which, although not passed on immediately in this instance, would be one of the most relied upon sources of data with which teachers would position the new arrivals to the school. This positioning would be principally in regards to their mathematical competence but associated with that would be other judgements of probable social positioning, although these latter notions might be somewhat fuzzy.

The second area from which teachers claimed to collect information for rating the children's prior attainment and potential was in their demonstrated *mathematical* competence in response to tasks in the lessons. The most influential of these task types was oral/mental and discussion activities in the early lessons. From these, teachers formed impressions of children's ability to handle a range of questions on a variety of mathematical ideas.

The four layers of this model – historical, mathematical, attitudinal, capital - clearly overlap and as I proceed to what I define as the third and fourth layers of the model the boundaries become increasingly blurred. What is important to note here is that the first two layers were broadly considered by the teachers to be reliable and objective. In the

third and fourth layers teachers' initial impressions of the children become far more subconsciously constructed. The latter phase of the research was aimed precisely at uncovering these hidden social interpretive frameworks.

The third layer of the model (*attitudinal*) is concerned with teacher's observations and judgements about children's behaviour and attitude. The teachers were uncomfortable with the notion that they might be interpreting children mathematical ability or potential on the basis of their attitudes and behaviours. However, this was relatively solid ground compared with the shifting sands that were judgements of style concerning children's dress, manners, hairstyles, names and so on, which form the fourth layer of the model, which I have entitled *capital*. This designation refers to the way in which all of the research participants (teachers, parents, children and I) positioned others on the basis of such stylistic social clues or 'tastes' (Bourdieu, 1984).

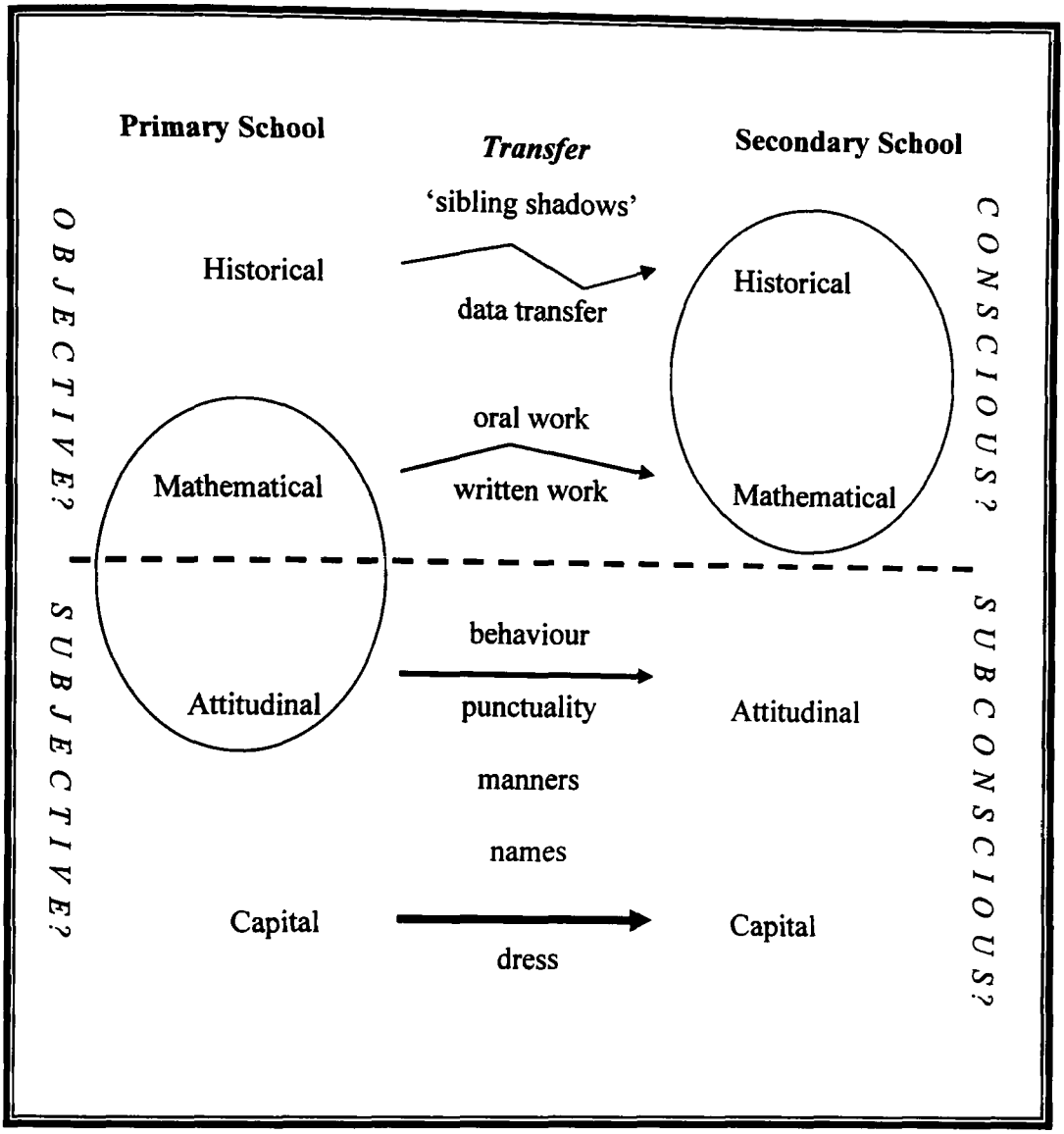
Figure 12 is an organisation of the four layers of the model across the two schools. This oversimplification of the complexity of school transfer is unfortunate. Nonetheless, the arrangement indicates that the top of the model, which includes test data, is assumed by teachers to be the most objective and yet retains a well disguised differential effect. I have used the zigzagged arrow to show that reliance upon this data is problematic, due to its capacity for class-differentiation (see Section 9.1.1). On the contrary, the deepest currents of cultural capital and taste, embodied in dispositions, dress, manner and mannerisms traverse the interface largely intact to be used, often without teachers' explicit knowledge in the formation of initial judgements concerning children. This adjoining line is not only straight but thicker as I want to portray how this strong social

current, although interpreted subjectively by the secondary school mathematics teachers, is difficult to stem.

The two shaded ellipses signify a shift in the teachers' explicit focus for assessing pupils in the early days. Whereas the primary teacher was able to associate classroom attitudes and behaviours with academic achievements, the secondary teachers considered themselves to be more objective in using the 'reliable' evidence offered by test scores. However, as I will explain below, this assumption that historical data is objective is incorrect, and grouping procedures based upon this data are inequitable, although this effect is 'cloaked' (Bourdieu, 1974). Again, by varying the thickness of the arrows I want to show that although the upper layers are assumed to be reliable and more influential in shaping teacher expectations, it is the relatively hidden, subjective, subconscious judgements concerning attitude and capital that have the most significant impact on children's mathematical learning trajectories.

Following Figure 12 I will take each of the layers of the model in turn and develop them, considering how the dispositions of teachers and children combine to position the children and impact their mathematical futures.

Figure 12: A model for post transfer relocation



9.1.1 Historical evidence: data and siblings

Since the introduction of the National Mathematics Strategy into KS3 an increasing number of secondary schools and their feeder primaries have made use of bridging units (for example, QCA, 2000a; 2000b). These pre-prepared materials are used in the final few weeks of the primary school and the first few weeks of the secondary school, in line with the Strategy's aims of improving school transfer through better curriculum and pedagogic continuity. In the suburban comprehensive school of my study, having a higher than national average attainment, these bridging units were taught in all-ability form groups for three weeks. These groups were then reorganised into ability-sets for the rest of the year, based upon the belatedly arriving national test scores. Although many of the children appeared not overly concerned by this second stage reorganisation (the first being transfer itself), it did present another discontinuity in their mathematics learning. This 'bridging and setting' system incorporates a teacher judgement element whereby teachers comment on the new groupings and can recommend changes. How children are grouped determines the scheme of work that is followed initially, so setting the course for future mathematical development. In each half-year there is one 'top' group which, according to official recommendations in the Framework for Teaching Mathematics (FTM), will follow a scheme of work which is largely from the year eight programme of study. There is a smaller 'bottom' group, which will contain most or all of those children who achieved level 3 in mathematics at KS2 and are therefore involved in a national, target driven, 'catch-up' programme. In addition there are two parallel middle groups.

However effective the schools had been at transferring the data, at some time in the early part of the new academic year KS2 test data would be used to decide which mathematics groups the children would go into. So this test data, with its presumed objectivity, will contribute to directing the early mathematics learning trajectories for these children.

The work of Cooper and Dunne (Cooper, 1998; Cooper and Dunne, 1998; 2000) highlights the serious inequities arising when mathematics scores from Key Stage 2 tests are used as a basis for grouping children. Apart from the common sense arguments for not basing children's (mathematical) futures on one test score, Cooper and Dunne have shown that the *realistic* test items found in the Key Stage tests prejudice the outcomes in favour of the middle classes, and against those from working class backgrounds. *Realistic* items, as opposed to *esoteric* ones, are those questions which appear to require knowledge of real life contexts but are in effect locked by a coded reality that can only be unlocked by the correct cultural key. That key is possessed by those with higher quantities of cultural capital. If the child treats the real life aspect of the question too literally they disadvantage themselves. Those who can see that the real life element is actually unrealistic and therefore treat it accordingly are advantaged. [For examples of such *realistic* test items see Cooper and Dunne (2000)]. As Bourdieu explained thirty years ago, this effect occurs "because traditional education is objectively addressed to those who have obtained from their social milieu the linguistic and cultural capital that it *objectively* demands" (Bourdieu, 1974, p. 40). Moreover,

> The education system...offers information and training which can be received and acquired only by the subjects endowed with the system of predispositions that is the condition for the success of transmission and of the inculcation of the culture. (Bourdieu, 1973, p. 80)

Willis' description of the struggles of working class students at higher levels of education is appropriate even for this test for 11 year-olds:

> Working class students fail not because they are working class, but because they do not have the 'objective' skills and language necessary for success. They are not 'cooled out' they are 'coded out'! (Willis, 1983, p. 118)

So children from more middle-class backgrounds are more likely to have acquired the interpretative tools or predispositions that are necessary to make sense of questions set by examiners who share their common cultural heritage. This effect might not be dramatic, indeed it is not statistically appropriate to analyse the case study children's test scripts for such evidence, but it is a factor that has been shown to have a disadvantaging impact on children from certain social backgrounds. The tests are not objective measures of children's mathematics competence, but they contain a subtle capacity for differentiation of the basis of socio-economic status, or rather the amount of capital resources possessed by the family. As Bourdieu explains:

> By a series of selection procedures, the system separates the holders of inherited cultural capital from those who lack it. Differences of aptitude being inseparable from social differences according to inherited capital, the system thus tends to maintain pre-existing social differences. (Bourdieu, 1998b, p. 20)

The secondary school head of department argued that KS2 test data is the best that they have, and that the process of grouping children by ability is a pragmatic necessity. The research evidence does not fully support this (Boaler, 1997; Boaler, Wiliam, and Brown,

1998), but the case for setting is based upon ideological principles, historical precedence and perspectives on the nature of mathematics and its teaching and learning. For many mathematics teachers who enjoyed the subject at school and considered themselves to have done well, perhaps because they were 'stretched' in their top sets, the case for setting is self-evident. As such new mathematics teachers often uncritically concede to this ideology and perpetuate this subtle strategy through which the education system reproduces its kind (Noyes, 2004b), that is predominantly the middle classes who legislate it, manage it and teach within it.

The secondary school planned to deal with some of the shortcomings of this setting process by maintaining flexibility between the groups. However, even if such a flexible approach works in theory, children do not find it straightforward to move between the three differentiated tiers, with their associated schemes of work and new social contexts. To a large degree their mathematical trajectory has been set by their test result.

The use of test data is not the only aspect of this historical strand as the influence of teachers' encounters with older siblings also shapes the introduction of these children to the new school. For example, consider Marie again. She had three different mathematics teachers in the first months at secondary school. Only during the first three weeks of this time was she taught by someone who had taught her older sister (Mrs Davison). Following the setting process, her mathematics lessons were unequally divided between a younger member of the department (Ms Black) and the new head of department (Mr George).

When Mrs Davison first saw the class list for this group she immediately recognised Marie's surname and surmised that she might be related to the known older sister. However, she was also adamant that she would not base her expectations for the younger sister on her experiences with the older. After three lessons Mrs Davison has correctly guessed, apparently from her classroom encounters, that Marie got a mathematics level 5, a judgement that was probably more dependent upon the teacher's ability to rank the class than to assess level 5-ness. At the end of this lesson the teacher pointed out Marie's enthusiasm for answering questions, and then the aforementioned 'sibling-shadow' appeared: "yes, come to think of it her sister was like that as well". These links made between Marie and the older sister did not surface very often but were, arguably, in the background all of the time. I described earlier the articulation by Mrs Davison of the similarities between the older sister and Marie. Now for Marie, any teacher judgements arising from this sibling-shadow would probably not have affected the grouping process but it is easy to see how it might.

The "things" that Mrs Davison cites may well have been remembered from the older sister but no doubt the fact that Marie has also exhibited all of these "little things to be different" in the first week has been informed by Mrs Davison's narrative recollection of Tina. As Gudmundsdottir (1996) explains, the telling and retelling of narratives can not only mutate them but obscure the original so that the teller no longer has access to it. Whatever the original narrative of Mrs Davison's experience of Tina, the teacher was beginning to co-locate the two sisters, albeit not exactly. Mrs Davison was also aware that Marie's mum had been a former pupil at the school but wouldn't be drawn into those more distant comparisons. Marie reported several accounts of her mum's school

experiences. I do not know whether Mrs Davison knew of any situations like these but it is clear that historical narratives concerning siblings (or parents) affect children's learning trajectories positively or negatively. Although Mrs Davison was keen to avoid 'tarring with the same brush' Marie and Tina, there was clearly a linking of the siblings' behaviour and attitudes.

Such sibling-shadows were also present, in different ways for the other three children. However, if the new teacher had arrived at the school more recently then this shadow was correspondingly paler. I have explained how Ms Williams came to realise that Stacey's older sister was excluded, but that she didn't think that it made much difference to her perception of the child. On one occasion I spoke to Stacey's form tutor

Mr Holmes If I had to choose one girl who would be a handful by year nine it would be her (Stacey).

Andy Do you know her sister?

Mr Holmes Is it Laura? She's in year 11. I have heard of her...so I'm thinking she [Stacey] must have a naughty sister...Oh I know her. I do know her, I take her for RE once a fortnight...she bunks off a bit though.

This is not her mathematics teacher and so not the direct focus of my study but it is clear that there are teachers who have formed such unhelpful associations early in Stacey's time in the new school.

Matt is the one child who did not move groups through the setting process and so he stayed with the same two teachers: Ms Black and Mr George. Both of these members of the department had not been at the school for very long and had not taught Matt's two older brothers. However, if they had, they would probably have found them to be similarly good mannered and hard-working.

Toby was also taught by this pair of teachers in the first few weeks of the year and his case is perhaps the most interesting. His two older siblings, although very different in nature, have both enjoyed considerable successes at the school, especially in mathematics. As a result there were high expectations for Toby and three of the four mathematics teachers that he was taught by in the first term of the new school treated him in the light of this knowledge. Consequently, even though he seemed unsure in the classroom, was reluctant to answer questions and made slow progress with tasks, this was excused as low self-confidence. So both Ms Black and Mr Newcombe would support Toby early on in the lesson. They also were both under the impression that he was more capable than he seemed and they both estimated his prior attainment to be higher than it had been. Even after the actual results had been passed on, another teacher, Mrs Gardner, was still convinced that his underperformance was simply due to the fact that "he hasn't joined us in the most positive frame of mind". At the end of the first term she was still making comparisons between Toby and his older brother and sister.

So between the differentiating effect of the test data and the impact of the sibling shadows, all of the children were unable to make a 'fresh start' in their mathematics learning at the new school. For some children these two aspects of the transfer were both advantageous, and for others, the negative effects were compounded. In this case study context all of the children had older siblings. Children who are the eldest in their families might not have to deal with this 'sibling shadow' phenomenon but still are subject to the differentiating impact of the testing regime.

9.1.2 Mathematical evidence

The main source of mathematical evidence in those early encounters was children's oral contributions to the lesson. The largely accurate estimations of national test grades of children could not have been made on the basis of marked work at this early stage, but rather judgements were based upon the spoken mathematics that is central to the three part lesson espoused by the Framework for Teaching Mathematics. Of the teachers that I worked with, some decided to arrange their classes in a particular order and others left the choice to the child. Correspondingly some teachers were very systematic in their posing of questions to children and ensured they had a range of responses to different questions from a variety of children. Other teachers, conversely, only took responses from children who volunteered answers. Children could choose whether or not to engage with the discussion. Interestingly, one particular teacher, with a lot of experience and a track record of good teaching fell into this second group. She was also the least accurate 'guesser' of past mathematical attainment, basing her judgements more on attitudes to work and prior knowledge of siblings.

Firstly, in considering how this level of the analysis applies to Marie we have already noted her enthusiasm for answering questions. However, her purpose here may not have been to impress the teacher as much as to assert her dominance in the peer group, as Mrs Davison explains: "she (Marie) likes to be the centre of attention and I think she is a leader rather than a follower". This is linked very much to layers three and four of the model that are discussed below. In fact, for Marie these layers are very much intertwined. Her oral contributions were strong and she therefore made a good

impression regarding her mathematical ability. However, her behaviour acts to counterbalance these positives.

At this level Matt is also impressive. He is always keen to answer questions and I observed on a number of occasions how the teacher would challenge him to provide additional reasoned explanations to the solutions that had given. It was very clear to the teacher, and presumably to his class, that he was a very capable mathematician. This can be contrasted with Toby whose generally lethargic and seemingly disinterested manner combined in one instance with a teacher who had made erroneous assumptions about his attainment based upon knowledge of the siblings. Mrs Gardner also asked questions only of those children who appeared willing and enthusiastic to answer. Consequently the information that would have told her that Toby's mathematics was not strong was not elicited or made public.

Another contrast can be drawn for Stacey, who was always enthusiastic but often incorrect when answering closed mathematical questions. Mr Newcombe had a clear and accurate impression of her ability after a very short period of time and accounted for this by referring to numeracy problems highlighted in whole class questioning. However, for Stacey, part of the process was about trying to impress with her enthusiasm so as to get the attention and hopefully the affirmation that she craved. This strategy became apparent to the teachers so that what was a means of assessing her mathematical competence also became a way of seeing her need for acceptance.

9.1.3 Attitudinal evidence

As well as considering the kinds of mathematical activity that children are engaged in during those early days in the secondary school, the manner of their engagement with school, teachers and other children requires consideration. I have described several of these situations earlier. For example, the (partly misrecognised) confidence of some children, or Matt's organised and 'well mannered' attitudes. What impressions do teachers get from the ways that the children behave in the classroom? How do they engage with mathematical activity? What social skills do they demonstrate when working with others?

> The attitudes of the members of the various social classes, both parents and children, and in particular their attitudes towards school, the culture of the school and the type of future the various types of studies lead to, are largely an expression of the system of explicit or implied values which they have as a result of belonging to a given social class. (Bourdieu, 1974, p. 33)

That Bourdieu here writes about social class when I have referred to his rejection of such a class position twenty-four years later (Bourdieu, 1998b) might seem contradictory. Bourdieu's sociology developed considerably in that time to a more nuanced and complex notion of social distinctions that nonetheless maintain actors in relative position. For the purposes of this research the citation simply says that attitudes and behaviours in school reflect those of the child's social position. This has been demonstrated through the case reports, for example in Marie's sense of resistance to the rules and the intelligent but subversive question avoidance strategies that she developed for the classroom.

One way in which teachers make judgements is in response to the extent of children's compliance or deviance from what is expected. Whilst Matt is altogether compliant, Marie, on the other hand, exemplifies forms of deviant behaviour. From the outset, Marie pushed the boundaries of acceptability regarding school uniform requirements, which relates both to her willingness to comply or resist, and her sense of 'taste', which will be explored below. She arrived last or even late for lessons and had a confrontation with another child in a lesson. Her behaviour was often competitive and confrontational, though as participant observer I had a privileged perspective on this as she strategically allowed the teacher to see only certain aspects of this misbehaviour. She prided herself on finishing tasks quickly but informed me that this was driven by a competitive urge to beat other people rather than by a concern to do the best work. This motivation of competition also lead to the assertion of her dominant position within the peer group, and this was not limited to her female peers.

Marie began to display deviant forms of behaviour, albeit mild, at a very early stage and these are entirely consistent with the habitus that she has acquired from her own particular family and social history. The move to the secondary school allowed her to broaden her network of friends, in particular with girls in other year groups.

Andy Why do you think she has those friends?

Ms Black I presume she knows them from where she lives...I've seen her knocking about with Deana McConnely a couple of times and I just think "Oh dear!"

Through this process she was renegotiating her identity, moving from the football-centred competitiveness of the primary school, where she was the only child travelling in from her local community, to the youth-cultured groups comprised of girls from older

years, many of whom live in the same areas of the city as Marie. The football link did enable her to form friendships with football-playing girls from other schools but having successfully used that strategy her position changed. Much of this happened outside of the classroom but was reflected within it. Some of the friendships that she formed associated her with a school sub-culture not favourably disposed to learning. I have already explained that the names of these new friends, many of whom come from her community, are very different from the girls in the group who have joined the choir (c.f. Hey, 1997, p. 141): something Marie describes as "disgusting". This latter group are "geeks" and not to be mixed with. Marie described the boy she sat next to in mathematics in the same derogatory way. When pursuing this it transpired that Marie could tell a "geek" merely from the way he or she walked and talked: and she could do a convincing impression. The boy in question often received a rather hostile response from Marie. It was she who decided when he was to be allowed into discussion and when he must stay out. This behaviour did not go unnoticed by the young female teacher whose class she was then in.

Marie's teacher, Ms Black, places high value on "good manners", something that she felt Marie sometimes lacked, but other children in this top group had in abundance. This teacher was fully aware that she favoured those with "good" manners (for example Matt); manners that she knows she has 'inherited' from one set of grandparents in particular. She described how their high standards of speech and etiquette had been inculcated in her through the significant amounts of time spent with them during her childhood. She was all too aware that she positioned children and favoured some over others, on the basis of their having more or less "good manners".

When writing about the French university system Bourdieu pointed out that

> the judgements that teachers make with regard to students, particularly in examinations situations, take into account not only knowledge and know-how, but also the intangible nuances of manners and style. (Bourdieu and Saint-Martin, 1974, p. 338)

Teachers of 11 year-old children, and indeed all teacher-student relationships, are influenced by similar intangibles. This is taken for granted of course but the issue here was that there was a favouring, not of those with 'good' manners but of those who have manners more like those of the teacher. Those judgements, being wholly subjective, identified those 'like me' and distanced those 'unlike me'.

Marie provided me with a lot of data about her evolving friendships and this reveals the strength of the peer influence, or youth culture field in her transition experience, as the diagrams at the end of Chapter 8 sought to show. For others, the renegotiation of position in the peer culture did not precipitate the same kinds of conflict with the school system that Marie exhibited. Contrast her with Matt, where, for example, we see a boy who was happy to do well in the lessons and to respect the teacher's authority, sharing similar values and manners. Over time Matt associated himself with others who were similarly keen to fit into the preferred school and classroom culture, and this further enhanced his successful transfer to the secondary school.

Toby's attitudes have been discussed before but they were in some ways ignored due to assumptions based upon the ability of his siblings. Later in the term Mr Newcombe did suspect that Toby was just playing the system but this was still be held in tension with the belief that one day Toby's true potential would be revealed, i.e. as a high attainer.

Here the powerful influence of Toby's social milieu is made apparent. Although his approach to learning in the classroom is less than positive, this is misrecognised and compensated for by the teachers who assume that he is highly able. The impact of the 'sibling shadow' is very powerful in this case.

The notion of favourites is an important factor that arose in the study, informed particularly by the third and fourth levels of the model. As can be seen in Ms Black's concern for good manners, so other teachers soon developed favourites on other grounds. The common factor in all of these strategies was that they recognise and reward, even if only in a small way, and for some children, those who share common ground in the social space. Ms Black likes, and arguably favours in small ways, those who have middle-class manners like hers. For example, she was somewhat disarmed when Matt, a "very polite" boy, approached her to apologise for forgetting his book, and consequently did not make her usual terse response. Another teacher, Mr Newcombe, acknowledged that there is a link between his class favourites and those who enjoy his sarcastic sense of humour, which itself reflects his social position. Yet another, Mrs Gardner, likes those children who respond enthusiastically to open-ended problem solving mathematical tasks. Bourdieu explains that "teachers assume that they already share a common language and set of values with their pupils, but this is only so when the system is dealing with its own heirs" (Bourdieu, 1974, p. 39), in other words, those from same regions of the social space as themselves.

These favourites are one way in which the classed "meaning-giving perceptions" (Bourdieu, 1984, p. 170) of teachers become apparent: judgements which act

simultaneously to identify the social origins of the children as well as play a part in their ongoing relocating. I shall return to this later but now move to the final layer, one which I have already begun to describe as it is closely related to behaviour.

9.1.4 Capital evidence

These aspects of those initial encounters are not so much hidden in the sense that teachers don't see them, but they are unreflected sources of data that have a significant impact on the early judgements of the teachers and yet often go unnoticed; for example names, dress and mannerisms. Making such judgements is such a fundamental aspect of social existence that much of the activity at this level goes unnoticed. Such socially determined judgements of taste (Bourdieu, 1984) concerning children's "style, language, taste, disposition, social grace, etc." are the "cultural capital which one acquires from family through socialisation as part of the habitus" (Harker, 1984, p. 124).

Consider first of all children's names which are indicators of class taste and distinction. All of the teachers in the study reluctantly agreed that they did make judgements on the basis of name, although they don't all follow the same rules but have understandings that are dependent upon their own social origins. Ms Black could guess, with uncanny accuracy, differences in social background of various class members, which although not based on name alone were no doubt shaped by it. Whether or not she is always right or not is of less significance here than the fact that she could, from her own life experience, form clear opinions of social background on the basis of the naming tastes of various social class-fractions. This teacher was rather embarrassed to admit that she

considered some of the names of children in her form group to be like "porn star names". She explains:

> Ms Black Well yes, I might go on to (teacher W), 'cause it's his year, but I've got a whole form full of people that have got porn names, porn star names. Your pet's name and your mother's maiden name, or something, which makes mine Bubbles Green. Because I've got a Roxanne , a Bianca who just out of comedy value sits next to Ricky so I can go "Oi, Ricky and Bianca"

Her principles of name evaluation were based on her own habitus and popular culture, but were also nuanced so that some names could be allowable from families with high levels of cultural capital rather than simply economic capital, and vice versa. Again, the accuracy of this assumption is not the key principle here, but rather that the process, with all its inherent subjectivity is working, under the surface. Mr Newcombe talked at a very early stage about having conversed with Toby about the origins of his name. He contrasted this name with that of a girl who had just arrived in his class. Her name made him think of "American trailer trash". Admittedly he was rather embarrassed at making this admission but did concede that he was in reality making those kinds of judgements, however subconsciously.

Teachers' observations of dress, again, initially unreflected, also form the basis of judgements concerning social background. The description of Toby "being like a little Victorian boy" is both perceptive and illuminating. That teacher went on to describe his posture and body language as being very proper. Marie on the other hand, appeared "trendy" to her teacher after one lesson although the teacher could not remember why she thought that. Following the next lesson she was able to describe how her school uniform was all on the boundaries of acceptability. There are many small yet significant

ways in which teachers are forming impressions of children on the basis of their classed tastes. These include hairstyles, "cheap shoes", body shape, accent, brand names on clothing, and so on. It would be impossible to isolate any one of these effects as they form a complete and integrated package and are a subjectively oriented window into the habitus, and therefore, the social background of the child.

I have tried to make explicit much of this level of the data through the case reports in Chapters 6-8. However, as with the teachers, this was one of the greatest methodological challenges in the research. How could I ensure that I noticed the things that I would not naturally notice as to me they seemed normal. The model diagram (see Figure 12) draws the reader's attention to the powerful ways in which this level of social experience strongly frames teachers' interpretation of children's actions, both social and mathematical, and thereby influences their responses to them. The net effect of these responses results in subtle yet important forms of advantaging children with more cultural capital.

9.2 EXPLORING THE LEARNING LANDSCAPE

In the previous section I discussed how the juxtaposition of children's habitus with the strategies of the teacher habitus creates a kind of continuity through the transfer process, albeit favouring some and disadvantaging others. I have also outlined the ongoing influence of family in the development of the child's habitus, and the part that this process has to play in reproducing aspects of the parents experience in the lives of their children. However, this major contribution to the process of moving school made by the historical development of the child in the context of the family is only one aspect of the

landscape metaphor as outlined in Chapter 4. The secondary teacher of mathematics sees, or rather interprets, the effect of those parental influences, which in themselves are shaped by the broader social milieu in which they are situated, but such home factors are often not accounted for. The other two Bourdieuan fields that I used to conceptualise the mathematics learning landscape were those of the education system, within which sits the school and then the classroom, and the peer group (which in itself is a highly complex field). In the following sections I summarize some of the changes in the educational landscape across the fault-line that is school transfer in three areas: the schools, the classroom and the mathematics learning experience. The focus here is more upon the objective 'geologies' of schools and curriculum, rather than the social 'climates' that were discussed in the earlier part of the chapter.

9.2.1 Schools

From the descriptions of the two schools involved in the study it is evident that they are very different places and much of the research into school transfer that was referred to in Chapter 2 describes various aspects of this. The buildings are very different in size, layout, resources, and so on. The relationship between the school and parents is very different, with a significant reduction in access for parents following the transfer. A number of the parents raised this as a concern, that in effect there is a transition in their relationship to the school and therefore to their child within that school. There are also considerable and widely acknowledged differences between primary and secondary schools' ethos, aims, pedagogies, philosophies and so on (see Chapter 2). This particular research context has its own peculiarities but it also resembles this broader

picture, that school transfer really is a fault line (using the landscape metaphor) in the educational experiences of children.

In acknowledging the considerable differences between schools it seems odd that there remains a belief that curriculum or pedagogic continuity can be fully realised. This sociological framework of this thesis is predicated upon the inter-relatedness of the various factors that impinge upon the schooling endeavour. So if the schools are very different the curriculum cannot be continuous and what Galton and Hargreaves termed the "structural limitations" (2002, p. 189) are very much a limiting factor. As the structural discontinuity will always be present in this system curriculum continuity, or pedagogic continuity, is not achievable. Neither, I would add are such goals attainable across within-school transitions. As I have shown, the ideologies and pedagogies of the secondary mathematics teachers are very different from one another. If the model from Section 9.1 were applied to all between-year moves, the compound effect of these multiple transitions demonstrates how processes which favour and disadvantage certain groups of children could further differentiate the educational trajectories of children from diverse social milieu.

At the risk of overstretching the landscape metaphor the transfer process might be something akin to moving from England to France. Although many things are very similar there also exists such considerable difference that it is difficult to see how a move from one place to the other could be anything but discontinuous. Moreover, building a bridge from one site to the other would not make the transfer any easier, because it has to do with deep, historically embedded cultures, attitudes, languages, and so on. The analogy that can be drawn here is to the futility of using bridging units of

work to smooth the curriculum transfer from primary to secondary school. The one thing that remains largely unchanged across the transfer interface is the child who crosses it, that is the dispositions of the habitus acquired through life until that age.

9.2.2 Classroom

The most striking differences in classroom environments seen in the study were between the classrooms of the various teachers at the secondary school, rather than between primary and secondary classrooms. The primary school mathematics lessons took place in the same classroom with the same teacher every day of the week, in the morning. Following the move to the secondary school these children normally had two different teachers for their thrice-weekly lessons. Moreover, the grouping process in the third week resulted in most of the children having another two teachers. The primary lessons were taught in the classroom in which they did all of their other lessons. In the secondary school the lessons took place in classrooms dedicated to mathematics teaching. The children seldom went to those rooms and in between their lessons hundreds of other children would use them. Those spaces were never 'owned' by any group of children, an issue also raised by Pointon (2000), and that lack of ownership was reflected in the use of wall space and the range of resources that were evident around the rooms.

The teaching was notably different in the two schools as a result of the significantly different structural organisation of time and space in the new school. There were lower levels of both relational and therefore pedagogic continuity from one lesson to the next and consequently a greater fragmentation of the curriculum and of children's

experience. Although the teachers' styles varied considerably in the new school, there were common features in the children's experience of mathematics. These included the nomadic nature of the children's learning experiences and the way they arrived at and left lessons, as well as the schemes of work and resources. However, differences in philosophy and pedagogy that have been described earlier result in varied experiences for the children, particularly when combined with the peculiar learning histories of the children.

9.2.3 Mathematical

The NNS and FTM have been designed to improve the continuity from KS2 to 3 and have been adopted by a considerable majority of schools, but have arguably been implemented in as many different ways as there are schools and teachers. This is because any new 'direction' in the teaching of mathematics has to be incorporated into existing pedagogic patterns and philosophical priorities and so to argue that such initiatives can create continuity simply by being used is a nonsense: there are no *clean slates* or *fresh starts*. I would even go further and say that their use, or the use of any scheme of work in any school, cannot guarantee a continuity of experience between any two teachers within that school. Teachers' classroom practices are unique, with their teaching and learning strategies or improvisations being generated according to the dispositions of their habituses, albeit evolving in response to the structuring power of the system. As such, teachers respond to and work with legislated policies, preferred pedagogies and resources in unique ways.

The school mathematics learning climates experienced by these children varied considerably but these climates cannot be separated from the comments above regarding both school and classroom. The primary teacher, Mrs Clarkson, envisaged mathematical study as something to be done, by oneself, without the need for discussion. She discouraged experimental and less efficient methods and the focus in the lessons was more to do with the mastery of skills than the exploration of concepts and development of understanding. In the secondary school Mrs Gardner placed great value on explanation, reasoning, exploration and creativity whereas Ms Black often had groups collaborating on mathematical tasks. Ms Williams tended to incorporate kinaesthetic activities wherever possible. Of course all of these teachers employed a range of teaching and learning styles and there were distinct differences both within the secondary school and between the two schools. The value afforded to discussion and reasoning was higher in most of the secondary classrooms than it had been in the primary school. I am not suggesting that the teaching was better in the secondary school but there are distinctive features of mathematics lessons in both schools. In this context the primary classroom was mixed ability and Matt's account has shown how this impacted him.

The landscape metaphor identifies other learning climates that are influential and the case reports of Chapters 6 and 8 identify distinctions in the ways in which the children's parents valued and supported their school (mathematics) learning experiences. In some cases there appeared to be contradictions between these learning climates or cultures of support that created tensions in children schooling, whereas other children's movement on the landscape was enhanced by home and school learning climates, with their

attendant values and practices, which strengthened their learning at school. I have described elsewhere (Noyes, 2003a), using data from this research not reported here, how the level of harmony between these home mathematics learning cultures and those of the school is a critical indicator of how well the children can maximise the opportunities offered by the school curriculum. In this way acclimatisation in the home towards the ways that school works, and mathematics is taught, is critical for the learning trajectories of the children. It is clear that this sense of harmonisation is also central to Bourdieu's sociology.

9.3 POSITIONING AND MOVEMENT ON THE LANDSCAPE

The case reports describe the positioning of these children in and by the three fields of schooling, family and peer culture. In those narratives and analyses I described the movement on the learning landscape as children move across the fault-line between primary and secondary classrooms. The point of interest in this research is the relative influence, and changes or lack of change in these influences, of the three fields for the different children. These influences were clearly summarised in the diagrams summarising the reports of Chapters 6 and 8. In particular I am interested in how these reveal the mechanisms whereby school transfer is more problematic for children from lower SES groups. Here children's backgrounds have been shown to impact upon their learning of mathematics and, *vice versa*, the teaching of mathematics evidently contributes to those mechanisms whereby social distinctions are ratified and reproduced, albeit in a probabilistic rather than deterministic way.

For example, the peer culture in the new school more powerfully influences Marie than when she was at primary school. Moreover, given more freedom she finds groups of older children with dispositions more in harmony with her own. The expanded social setting and opportunity to 'hang out' with the older children has been associated with a distancing from the learning priorities of the new school. It is as if the primary school had a stronger, constraining influence on her which, when relaxed in the new context, has allowed her to move towards what is for her the more dominant influence of a particularly peer subculture. Her associations of the new school with her mum's apparent exploits there have also strengthened this shift, so the 'family' influence seems to have strengthened and the controlling influence has weakened, or is more effectively resisted.

Contrast this with Matt, who made an impressive start to his mathematics learning in the new context. His manners have impressed his teacher and he has progressed very well in the new school context. If anything he seems to have become more strongly influenced by school and academic success. His family values have been interpreted favourably by the teacher and if anything there has been a reduction in his talk about popularity and friendships. It could be argued that the peer culture is also strong for Matt but that he wants to accept, and be accepted into, a different part of it. However, the positive influence of his family's values and the desire to be successful at school are having a disproportionate pull on him, precisely because they are so harmonious with those of the school.

Toby shows the first signs of relaxing his attitude to school still further. Yet despite arriving with a far from positive attitude his potential is misdiagnosed, largely on the basis of teacher knowledge of his siblings. Their success is somehow transferred in the form of high expectations to Toby. This has ensured extra support from the teachers in the lessons. So for him, the influence of the family is very strong and despite the weakened influence of the schooling field and attractions of the new social opportunities, he is favoured due to the strong "sibling shadows", which in themselves were strongly influenced by family. However, Toby's resistance, partly through the use of humour and partly through strategic disengagement, is arguably aimed more at this family than at the school. Whereas Marie considers her mum a role model and seeks to resist the conforming power of the school structures through a mixture of subtle and confrontational means, Toby's lack of engagement is more a reaction to the conforming expectations of the family and those who know the family.

Finally Stacey is having difficulties with the social dimension of the move. She is desperate to make friends but whenever I talked with her it was clear that despite her lists of acquaintances she had not developed very many 'good' friends, and her associations were more often with people like herself, who also had difficulty making friends. During lessons she was often talking with other children and having to be brought back on task. The family influence was unfortunately weak in terms of positive support for her academic development but as I have already explained the negative effect of the *sibling shadow* can be seen with the first two months at the school. Similarly, her teachers have accurately pinpointed Stacey's home circumstances. So for Stacey the strong effects of the school, family and peer cultures all have a tendency to marginalise her and further alienate her from her peers.

So the peer culture has a strong pull but this is counterbalanced in Matt's case by dispositions that prioritise academic success over social acceptance. Rather, he can assure the "good reputation" that he desires through academic success. This prioritisation brings him safely into the group of peers that are most like him, where he is beginning to form more harmonious and mutually beneficial friendships. For Toby, associating with other boys who are strategic disengagers enables him to moderate the anxiety arising from the strong expectations of the family.

Coincidentally, these two children are those in the study coming from the families with higher amounts of economic, cultural and social capital. Also coincidentally, the fact that all four of these children have had older siblings at the school has revealed how these "shadows" can reinforce the children's academic trajectories, bending them favourably or unfavourably, in association to their socio-economic status.

Throughout the data that has been presented the overwhelmingly central role of the child's habitus can be seen. This habitus has its roots in the family habitus and that of the wider social milieu. So, however strong the school influence might be thought to be, schooling success is heavily dependant upon whether or not the schooling project comes into line with the express aims, however implicit, of the family. For Matt, this is an easy alignment; there is considerable harmony between what he, and his mum, want out of school. Contrast that with Marie, who seems to be in a continual state of discord with the system. However according to Bourdieu's theoretical frame it is not simply Marie that is at odds with the system, or Matt who is submitted to its priorities. Their dispositions reflect those of larger social groups which are either disaffected with or 'in

tune' with the system priorities. So again is seen the process of dispositional harmonisation where the preferred dispositions are those we can broadly term the middle classes.

What can be said is that, of the cultures described in Figure 1 (Chapter 4) that comprise the learning climate for mathematics, the family learning culture is dominant through the strategic embodied dispositions of the habitus. The peer culture is also very influential and classroom and school cultures seem to take a background role. The change in school ethos at transfer, itself coupled to the structure of the two schools, has been shown to give more space for the family and peer cultures or fields to take effect. At this time, teachers also unknowingly collude with these field effects by strengthening the social relocation process. This can have positive or negative effect on the children's social and learning trajectories.

9.4 SUMMARY

In this chapter I have continued the analysis started in Chapters 6-8 but initially this was focussed on the role played by the teachers in steering the children through the transition in their mathematics learning. This analysis shows the complex and powerful way in which the system, through the strategic dispositions of its teachers can contribute to the process whereby children from more culturally 'well off' families are advantaged at the primary-secondary interface. For all of these children there exists considerable risk, but those who seem to be more cosseted through the turbulence of transition are those who the system recognises as its heirs, Toby and Matt. Despite the fact that in Toby's case he was struggling to resist the strong influences of his family the effect was the same,

that he was the recipient of more support than might otherwise have been expected for someone displaying his attitudes.

The levels of the model indicate, rather unnaturally, the way in which presumed subjective data is apparently prioritised in making judgements concerning children's prior attainment. In fact, the subjective judgements of taste at the other end of the model are also very powerful in shaping the early educational experiences of these children. These are processes whereby teachers assess, largely subconsciously the social background of the children through their use of language, manners, their dress, haircuts and so on. This kind of data might seem largely irrelevant to children's learning (of mathematics) but the data from this chapter and the previous chapters makes it clear that these children emerging mathematics learning identities are very much dependent upon these factors.

In the second part of the chapter I have related the empirical work back to the model of the learning landscape. Although my analytical work has made considerably more use of the tools of habitus, field and capital, the landscape perspective is still wrapped around this analysis. My contention with that metaphoric model was that the disjunction between the (mathematical) learning climates of the school(s) and home would offer a reason why certain policy interventions were not very effective in the pursuit of change. I think that the analysis above has shown that to be the case although it wasn't formulated in the terms of the landscape. What is definitely clear from my analysis is that the climate, the current social space, is the most powerful factor in shaping children's learning experiences in school, at transfer and in mathematics.

10. CONCLUSIONS

In this final chapter I draw together the findings from the previous analyses and offer some succinct conclusions regarding the impact of school transfer upon children's mathematics learning trajectories.

Following the summary of findings I return to the notion of 'fresh start' that was described in Chapter 2. Whilst teachers have been accused of adopting such an approach with regards the curriculum, I also reported that some children might benefit from a fresh start in the new social environment. However, I conclude that both notions of fresh start are unattainable. The latter form of continuity is evidently not realistic due to the way in which the dispositions that positioned the children in the primary school are embodied in the habitus of the child and transferred to the new context. Moreover, the notion of curricular continuity is also problematic due to the social and systemic discontinuities in the learning landscape at the primary-secondary interface, although some progress has reportedly been made in this area (Galton et al., 2002).

School transfer acts like a prism that tends to have a differential impact upon children's learning trajectories depending upon their family habitus and cultural resources. I use this to argue that the transfer process does in fact split the trajectories of children from diverse social groups, accelerating the advantaging of some, whilst slowing the trajectory of others. This helps to explain the hiatus in academic progress that is well known to affect a large number of children at transfer.

Following that I will consider the state of the learning landscape at the interface between primary and secondary schools as experienced by these children. The 'structural limitations' at this critical branching point in children's educational trajectories, understood as both systemic and social, have been shown to be both very real and very difficult to challenge.

My final thoughts reflect upon the thesis itself and the extent to which I am satisfied with the outcomes of the research.

10.1 A SUMMARY OF FINDINGS

In the analyses of Chapters 6-8 I presented the case reports of four children as they moved from primary to secondary school. My focus was upon their mathematics learning trajectories and how the three fields that steer these trajectories have increased or diminished influence across the transfer. The effects of this process of moving schools are evidently different and dependent upon the social origins of the child. In order to maximise the opportunities offered by the mathematics learning experiences in both schools the children need to have dispositions that are harmonious with those valued by the school. However, it is clear that across the transfer the influence of the peer group changes, and together with the ongoing effects of the other two fields some turbulence is created in the trajectories of these children. It is this turbulence in and between the fields that causes the hiatus in progress experienced by a significant number of children (Galton and Hargreaves, 2002).

For the two children who experienced most discord between their family generated habitus and the priorities of the school, the new peer group has reinforced the tendency towards resistance and marginalisation. These were the two girls in the research, and studies have focused on the impact of girls' mathematical identities at transfer (Jackson and Warin, 2000; Walden and Walkerdine, 1985; Walkerdine, 1998). I do not want to focus on gender here, as the dispositions of the habitus incorporate such gendered identities. The process leading to increased resistance to the schooling process happened in different ways for these two girls, but the multiplication of social possibilities, and the positioning by/in the newly constituted peer field has allowed them to be disadvantageously positioned with regards the schooling field. This expansion of

social possibilities, and the setting process, has also had a similar effect upon Toby. Now that he is in the middle-attaining mathematics group, he identifies with other children who are experiencing the tension of not meeting middle-class family expectations and so resists the conforming power of both family and school. There is one exception in this group: Matt has found (himself in) a group of peers who very much share his ideals and this has closed the relative weakness in the social context in which he learns mathematics. His experience of school transfer is the most harmonious, particularly with regard to his learning of mathematics.

For all of the children the change in their relationship to school and the loss of the more secure, structured environment of the primary school means that there must be a readjustment in the relative influence of these fields. There is a kind of power vacuum that needs to be filled. Clearly the newly structured peer group is the most likely to fill this power void, and much of the recent research that I cited in Chapter 2 highlights the importance of this time of social renegotiation (for example, Day, 1996; Harris and Rudduck, 1993; Lucey and Reay, 2000). However, this is only partially dependent upon the child: upon the agency made possible through the strategies of his/her habitus. When understood in the context of the three fields, this process of social repositioning is seen to be part of the complex structures of a diverse society. As children 'choose' their new friends the process of dispositional harmonisation is locating children in these new fields according to their social milieu. Harris and Rudduck report that in their study:

> Friendship groupings were influenced by students' attitudes towards the formal culture, although later students' sense of academic identity became a stronger influence. (Harris and Rudduck, 1993, p. 323)

'Attitudes towards...culture' and 'academic identity' are both related to social position and so they support my point that the negotiation of friendships structures children relationally in ways that reflect the wider distinctive positions of their families in society.

Chapter 9 extended this analysis to consider how the teachers in the new school also contribute to this process. At the early stages in the new school, teacher judgements influence the emergent relationships between child and teacher, the possibilities for favouring some children over others, and even the decision concerning the mathematics group in which each child should be placed. I have shown how the social origin of the teacher also has a clear influence on the new arrival's mathematics learning trajectories. Although teachers assume that their judgements are predicated upon objective evidence (e.g. SATs), their initial impressions are coloured by the subtleties of class taste and that these judgements combine in small but significant ways to favour those children from families with greater economic and cultural resources.

When the actions and judgements of teachers as well as the positioning power of the peer group are combined with the strategic actions of the children themselves, there results a complex interplay between the social fields. This interplay impacts the children in different ways but tends to advantage those from families who share the values and priorities of the schooling system, particularly those who can find friends with similar dispositions.

10.2 CONTINUITY AND 'FRESH START'

In the overview of research in Chapter 2 I made reference to two ways in which the phrase "fresh start" has been used to describe the move from primary to secondary school. The most common usage is as a criticism of approaches by secondary teachers that they apparently assume little prior understanding of mathematics and so start with all children from a relatively low conceptual level (Comber and Galton, 2002; Galton and Morrison, 2000). The resulting slow progress through work that has already been covered leads to disillusionment, frustration and slow rates of progress through Key Stage 3. I have pointed out that the data loss at transfer is considerable, and no matter how well assessment data is transferred, it by no means provides the secondary teacher with an adequate account of a child's mathematical understanding and attainment throughout their pre-secondary school education. Whilst I would support a change away from the caricature above it is naïve to think that repetition can be fully avoided, both across between-school and in-school transfers. Indeed such a process of revisiting and developing is a necessary part of children's mathematical development. The change in the school culture requires a process of socialisation, and while considerable effort is focused upon this social renegotiation the investment in mathematical learning is decreased. Interestingly, from the four case studies upon which my analyses are based, the only child who seemed to be enjoying his mathematics and making good progress was Matt, who according to the above 'fresh start' accusation, might be least expected to be doing so. Having said that, he was the representative high attaining boy who is positively disposed to learning mathematics in the new school. For those children who were not high attainers in mathematics, Mrs Clarkson the year six teacher, was able to encourage them with the knowledge of other strengths, as well as having good working

relationship with the family. The new secondary teacher has none of these alternatives as a means of supporting the child through the transition.

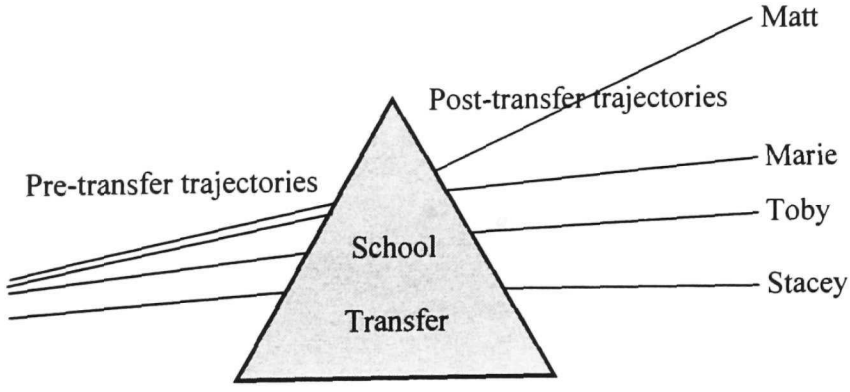
In my study, however, there are strong undercurrents of continuity that do in fact make it impossible to conceive of transfer as a 'fresh start'. Some might consider it advantageous for certain children to be able to start afresh after moving school. Whilst this might be desirable in theory, the practice is that through the embodied dispositions of the habitus the child carries their primary school experience, as well as the dispositions of their wider social milieu, into the secondary context. Moreover, the interpretive process that the teachers are engaged in, however implicitly, in the early weeks of term, means that it is impossible for those who had hoped for a fresh start to actually obtain one. Harris and Rudduck (1994) point out that,

> The effect of being trapped in your own past behaviours, or in a mirage that is unfounded and reflects the bias of the observer, is disheartening and can be damaging ...What students do not seem to know - and this is perhaps disturbing in relation to those who see secondary school as a fresh start - is that they come with labels - the reports from their primary schools; they arrive at secondary school with pre-packaged reputations. (Harris and Rudduck, 1994, p. 42)

Firstly, the idea of being 'trapped in your own past behaviours' is overly deterministic and does not incorporate the agency and improvisationary breadth of the habitus. However, in another way this idea is rather shallow in comparison to the analysis herein of how the processes of social reproduction flow through families and the social spaces in which they are located. The dispositions of the habitus are no mirage but they might well be subject to misrecognition. What cannot be denied is that there exists what Harris and Ruddock describe as "bias", although I have chosen to explore that bias as

simply the distinct perspectives of all of those involved in the process of moving schools. That these effects are damaging is clear, but to suggest that these effects are solely the responsibility of the observer, in my case the teacher, is incorrect. As I have shown through Chapters 6-9, a lot of the judgements made by teachers are coupled with the strategies mobilised by the children to position themselves, to comply or resist, and so on. In that sense teacher' judgements, and indeed the process of transfer itself acts like a prism. The diagram below shows how the process of moving school acts in a similar way to how a prism 'splits' light. Although not directly analogous the idea is the same. Unlike the refraction of light, the school transfer *prism* 'bends' input trajectories in ways dependent upon the child's habitus.

Figure 13: The school transfer prism



The group of children approach the primary-secondary interface and, passing through it, theirs and teachers' actions tend to split the mathematics learning trajectories of the children. Whilst Matt seems to have been advantaged in the move and the 'slope' (Bourdieu, 1984, p. 111) of his trajectory has steepened, Stacey seems to have had the opposite experience making little progress in the move. In fact, the net effect of the marginalisation that she has experienced in the peer group seems to have reduced the

slope of her trajectory. By these trajectories I am deliberately blurring two fuzzy ideas. For Bourdieu, the trajectory, or 'slope of the social career', is about social trajectories towards distinct positions in society, which is very much what this analysis is about. Overlapping this, it is clear that mathematics learning trajectories are also altered at transfer, related as they are to the broader social trajectories.

The finding by Galton, Gray and Rudduck (1999) that there still exists a hiatus in progress for significant group of children, points to those whose mathematical learning trajectories flatten out following transfer, at least for a time. The *prism* effect for this group of children identified by Galton *et al.* is that a process of development (in mathematics) has now been levelled out due to the relocation. The school, both in terms of its structures and the teachers that manage those structures, the peer group, and the children with their family derived dispositions, all play a role in this process. Over the years there has been little change in this regard so that from the time of Nisbet and Entwistle (1969) until now it is still the children from families with lower capital resources that are most likely to be in this group.

Secondary school teachers have been, and still are being, accused of adopting a fresh start approach that hinders children's learning (see, for example, Ward, 2002). Analyses from the above case studies show that this is evidently not the full story, so there is clearly more to this phenomenon than curriculum continuity. What is more troubling, and arguably unchangeable by virtue of the fact that it is systemically embedded into the transfer process, is how teachers and children ensure continuity of experience through the strategies reported in Chapter 6 - 9. On the basis of the theoretical framing of this

research the SES related differential response to the challenges of moving school is as much to do with the deciphering of dispositional cues given by children, to teachers and one another, as it is to do with teaching and learning approaches. When these judgements are compounded by the inherent injustice of the national testing regime in this country it would seem that those children from disadvantaged homes are double losers. Not only are their test scores affected, despite the commonly held belief that they have objective reliability, but the repositioning process following transfer tends to reinforce the disadvantaging process.

So moving schools could never be understood as a 'fresh start', as through the renegotiation and repositioning of the children on the social landscape of the secondary school, relative positions are largely maintained from pre-transfer days. For Toby, the child with most cultural capital and highly 'able' older siblings he is constantly over-rated, despite two months of lax attitudes and poor progress. Stacey on the other hand has probably been disadvantaged through the exam process, has low levels of social capital and so struggles to make friends and would appear to get very little support from her mum. However, this drives many of her classroom responses through behaviours that reveal her desire for acceptance. She is marked out as being from a less supportive family and the impact of the truant older sister can already be seen at an early stage.

10.3 THE STATE OF THE LANDSCAPE

The rationale for the development of the descriptive learning landscape metaphor was to view the process of transfer from a 'big picture' perspective, considering the broader range of socio-cultural factors that impinge upon the learner of mathematics and the passing between schools. Through the use of Bourdieu's tools of field and habitus I have shown how dispositions to learning, schooling and people that have been developed in the home and then modified in the early years of schooling ensure a high level of continuity between schools. What this study has demonstrated is how a number of mechanisms function to protect those children who were previously endowed with much cultural and social capital. At the same time the transfer tends to disadvantage children from poorer homes, at least in terms of cultural and social capital, but concomitantly in these cases economic capital.

I did not intend to focus overly much on the teaching and learning of mathematics but I have shown that there are differences in approach and teacher habitus that tend to reinforce the differential impact of transfer. The reason for mathematics only taking a part is that I wanted to highlight all of those other layers that form the learning landscape, primarily the dispositions of the teachers, children and their families.

All of which brings me back to where I began but with serious questions over the potential for change. Whilst a more equitable process of transfer is highly desirable, the limiting structural factors stand as a considerable obstacle to the achievement of this goal. The structural factors that Galton and Hargreaves (2002, p. 189) referred to were limited to school structures but I would go much further to say that larger, culturally

embedded social structures have a major part to play in the ongoing problems of transfer. These are social structures that, despite the best intentions on the part of the various actors, tend to act so as to further disadvantage the disadvantaged. They are social structures: ways of behaving, talking, thinking, interacting, etc., that are embodied in the habitus of teachers, pupils and parents and that orient classroom practice so as to maintain the current state.

The following words from Bourdieu are as relevant now as they were thirty years ago:

> ...in fact, to penalise the underprivileged and favour the most privileged, the school has only to neglect, in its teaching methods and techniques and its criteria when making academic judgements, to take into account the cultural inequalities between the different social classes. In other words, by treating all pupils, however unequal they may be in reality, as equal in rights and duties, the educational system is led to give its *de facto* sanction to initial cultural inequalities. The formal equality which governs pedagogical practice is in fact a cloak for a justification of indifference to the real inequalities with regard to the body of knowledge taught or rather demanded. (Bourdieu, 1974, p. 37)

If Government policy interventions, aimed at improving the transition from primary to secondary school, fail to consider how such undifferentiated policy might actually be favouring some children and disadvantaging others, then the situation will remain unchallenged. Such policy, written largely by middle class civil servants and implemented by middle class teachers, is in effect designed to benefit 'our' children, that is the children of the middle classes. This sense of 'our'ness was seen in the recent Government Green Paper 'Every Child Matters' (DfES, 2003a) which described "what we want for our children". What 'we', the educated middle classes in positions of power, might want for 'our' children is probably not homogenous with what different

social groups want for their children. Above, Bourdieu sounds the same note of caution, that is we assume that all children will benefit from the same policy but in fact we increase the *prismic* potential of the transfer process to separate between those social groups with greater and lesser capitals.

If it is possible to disrupt the disadvantaging cycle at school transfer, and I suggest that this would take a long time at best, then much more is needed than short term Government policy. The very complex social fabric of the UK and its reciprocal relationship to the education system needs to be understood more fully if the mathematics learning landscape is to be changed. This thesis makes a contribution to that understanding.

10.4 FINAL REFLECTIONS

I began this thesis with an autobiographical account of how I came to be doing this research, at this time and in this place. The processes of design, reading, fieldwork, analysis and writing have been very rewarding but at the same time full of unexpected challenges and difficulties. In Chapter 5 I wrote about the process of writing and the part that writing has played in the thesis, through the various conference papers and journal articles that have been steps along the way. I come to the completion of the thesis wondering how different it would look if I were to carry out the research again, or even rewrite it from the same notes and data.

One of my disappointments with this thesis is the way in which the very real textures of every day life that I sought to explain have all been replaced with my descriptions and analyses of them. In the middle of the process I considered the possible ways in which more could be made of the primary data in the final thesis: video, voice, images and so on. Despite entertaining the idea of an alternative form of thesis I have opted for a traditional one, but feel that this form of thesis does have limits for visual research. Here I see my own habitus and the interplay between an interest in developing creative, innovative approaches to my work, and a pragmatic, strategic decision to complete the doctoral work in good time. In fact, the research has been as much a voyage of self-understanding as it has of developing theoretical and methodological knowledge regarding the process of educational transitions, in this case primary-secondary transfer. The analytic tools used herein would be very useful if considering other educational transitions and studies of the movement to post compulsory schooling and higher education, whether in mathematics or more generally, and could be enhanced by this

theoretical perspective. Bloomer and Hodkinson (2000) have used Bourdieuan sociology to consider educational careers of older teenagers and I am developing these ideas in relation to initial teacher education.

In addition to the development of theoretical tools that might be useful to those researching the socio-cultural background of mathematics education, this thesis has also made use of a new form of diary, the video diary (Noyes, 2004c). This methodological tool needs to be further developed to have more thorough ethical guidelines and alternative theoretical frames, but the opportunities that it offers the qualitative researcher are exciting. It offers multiple lenses into the social worlds of those being researched in ways not possible by traditional interviewing techniques.

My central aim has been to understand better the process of school transfer, particularly as to how those processes might affect children's mathematics learning trajectories. The picture is a complex one that cannot be reduced to a single statement other than to acknowledge the dominant and differential effect made by the social structures. These structures are both objectively and subjectively enacted in the strategic actions of teachers, parents, peers and pupils and steer children's mathematics learning trajectories in the move. As such, this thesis contributes to understanding of the thorny issue of school transfer and clarifies the rather ambiguous notions of 'fresh start' that are part of the discourse of school-transfer improvements.

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APPENDICES

maths and all sorts of things and also in chess if you write your moves down that's like getting
hang of your numbers and working them out

Andy: Can you code your moves?

Matt: yeah

Andy: Is it like using coordinates?

Matt: yeah its abcd.. and 123

Andy: So there is some maths there. You didn't think you were doing maths when you played did you

Matt: No

Andy: So tell me, if your dad is good at playing chess do you think he's good at maths as well

Matt: erm…yes he is good at maths…erm

Andy: how do you know?

Matt: he works out things and we have to work out like the miles on the distance to travel and like that

Andy: he sets you maths problems does he

Matt: yeah sometimes he does yeah. Normally I can work them out but sometimes they're toc

Andy: Tell me a bit more about the rest of your family. I know that you've got an older brothe

Matt: well my mum and dad split up so I've got a step-mum and a step-dad…erm…

Andy: who do you live with?

Matt: mum mainly and I go to my dad twice a fortnight and erm I've got my brothers Tim and and then I've got two step sister Charlotte and Helen and then I've got one more step-brother Sam and I live with my step-dad and mum and then I've got all his relatives and all my relative

Andy: that's quite a big family isn't it

Matt: when we all meet up sometimes it is hard